THE physical therapy REVIEW

38th Annual Conference
American Physical Therapy Association
The Palmer House Chicago, Illinois
July 2-7, 1961

40th ANNIVERSARY

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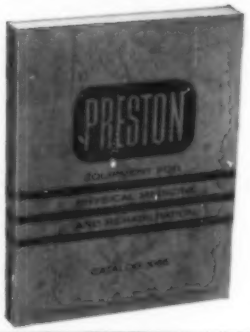

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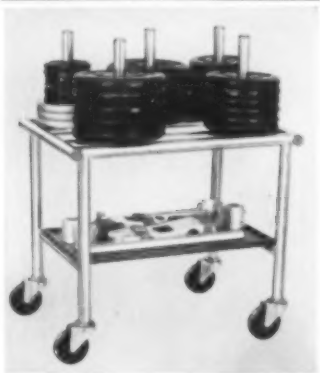

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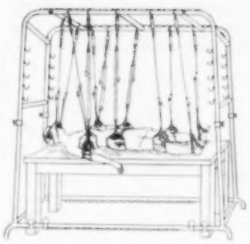

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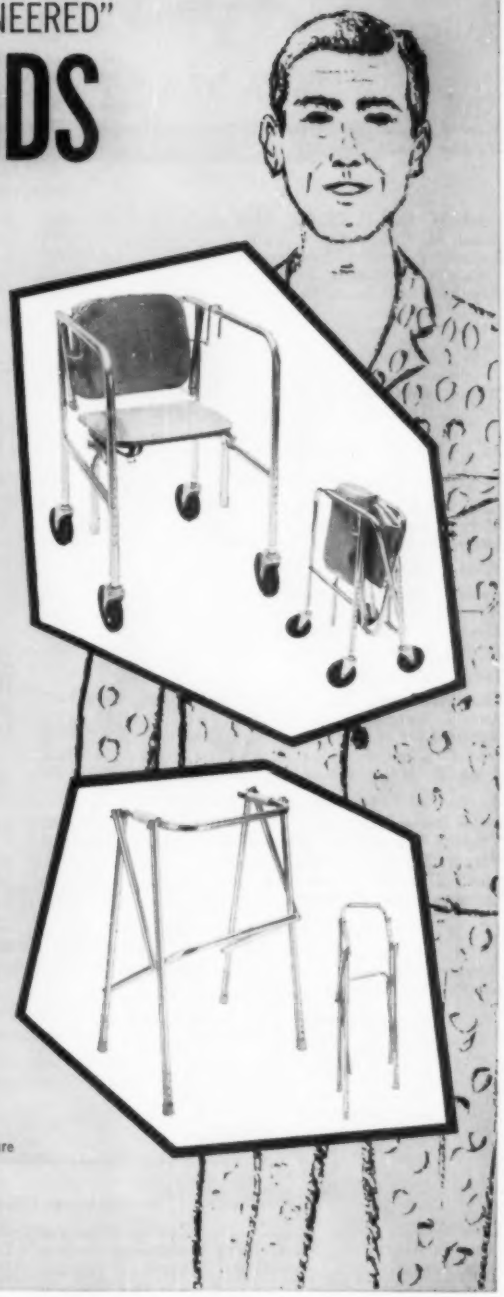

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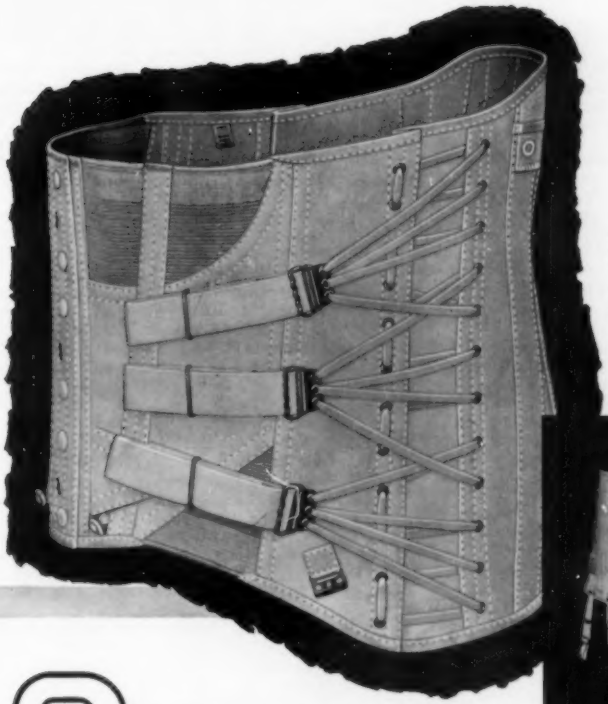

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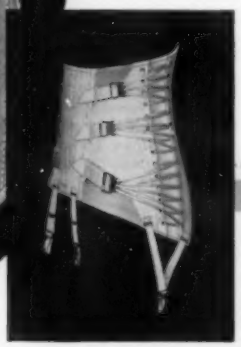

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Connecticut*†: Apply to Edward O'Donnell, Sec., Board of Examiners for Physical Therapists, 117 Osborn Ave., New Haven. Examinations held in Hartford.

Delaware*†: Apply to State Examining Board of Physical Therapists, 302 Waverly Rd., Wilmington 3.

Florida*†: Apply to Homer L. Pearson, M.D., Sec., State Board of Medical Examiners, 901 N.W. 17th St., Miami 36.

Georgia*: Apply to C. L. Clifton, Joint Sec., State Examining Boards, 224 State Capitol, Atlanta.

Hawaii*: Apply to Department of Health, P.O. Box 3378, Honolulu.

Illinois†: Annual examination, third Friday of October. File applications 15 days in advance. Apply to Judge Vera M. Binks, Director, Department of Registration and Education, Capitol Building, Springfield. Examinations held at 160 No. La Salle St., Chicago.

Indiana: Annual examination, Mid-June. File applications by May 15. Apply to Ruth V. Kirk, Exec. Sec., State Board of Medical Registration and Examination, 538 K. of P. Building, Indianapolis 4. Examinations held at Indiana University Medical School, 1100 W. Michigan, Indianapolis.

Kentucky†: Semiannual examinations, April and October. File application by March 1 or September 1. Apply to Agnes Shehan, Sec., State Board of Physical Therapy, Kentucky Crippled Children Commission, 982 Eastern Parkway, Louisville 17. Examinations held in Frankfort.

Maine: Thrice yearly examinations. Apply to Daniel Hanley, M.D., Sec. Medical Examining Board, P. O. Box 637, Brunswick. Examinations held at Portland City Hall, Portland; July examination held at State House, Representative Chambers, Augusta.

Maryland*†: Apply to State Board of Physical Therapy Examiners, 301 W. Preston St., Baltimore 1.

Massachusetts†: Semiannual examinations, April and October. File application two weeks in advance. Apply to Board of Registration in Medicine, State House, Boston 33. Examinations held at State House, Boston.

Minnesota*: Apply to State Board of Medical Examiners, 230 Lowry Medical Arts Building, St. Paul 2.

Nebraska*: Apply to R. K. Kirkman, Dir., Bureau of Examining Boards, Room 1009, State Capitol Building, Lincoln.

Nevada*†: Semiannual examinations. Apply to Margaret Heidrich, 506 Humboldt St., Reno. Examinations held in Reno or Las Vegas.

New Hampshire*†: Apply to Edward W. Colby, M.D., Sec., Board of Registration in Medicine, 61 So. Spring St., Concord. Examinations held at State Health Building, 61 So. Spring St., Concord.

New Mexico*: Apply to Registrar, Physical Therapists Licensing Board, Box 2206, Santa Fe.

New York: Semiannual examinations; June and December. File applications at least 30 days in advance. Graduates of registered curriculum apply to John W. Paige, Chief, Bureau of Professional Examinations and Registrations, 23 South Pearl St., Albany 7; graduates of nonregistered curriculum apply to Robert C. Killough, Jr., Assistant Commissioner for Professional Education, 23 So. Pearl St., Albany 7. Examinations are held in Syracuse and New York City.

North Carolina*†: Semiannual examinations. Apply to Edith M. Vail, Sec., Dept. of Physical Therapy, N. C. Baptist Hospital, Winston-Salem.

North Dakota*†: Apply to M. Eileen McEown, Sec., State Examining Committee of Physical Therapists, 623 First Avenue Southeast, Minot. Examinations held in January and July. File applications one month in advance.

Ohio: Apply to: Herbert M. Platter, M.D., Exec. Sec., Ohio State Board of Medical Examiners, 21 W. Broad St., Columbus.

Oklahoma*: Apply to Lucy Haidek, Exec. Sec., Board of Medical Examiners, Braniff Building, Oklahoma City. Examinations held at Board of Medical Examiners, Braniff Building, Oklahoma City.

Oregon†: Apply to Oregon State Board of Health, 1400 S. W. 5th Ave., State Office Bldg., Rm. 866, Portland 7.

Pennsylvania†: Semiannual examinations, January and July. File application December 15 or June 1. Apply Mrs. Alva R. Cockley, Sec. State Board of Medical Education and Licensure, Box 911, Harrisburg. January examination held in Philadelphia; July examinations held in Philadelphia and Pittsburgh.

South Carolina*†: Apply to Dorothy B. Allen, Physical Therapy Dept., Columbia Hospital, Columbia 14.

South Dakota*†: Apply to John C. Foster, Exec. Sec., State Board of Medical and Osteopathic Examiners, 300 First National Bank Bldg., Sioux Falls.

Tennessee†: Annual examination, second Monday in June. File application one month in advance. Apply to Board of Medical Examiners, 1633 Exchange Bldg., Memphis. Examinations held in Nashville.

Utah†: Annual examination first Tuesday in May. File application two weeks in advance. Apply to Frank E. Lees, Director, State Department of Registration, Room 318A, State Capitol Building, Salt Lake City.

Vermont*†: Apply to Sophie Myers, Sec., Board of Physical Therapy Registration, De Goesbriand Memorial Hospital, Burlington.

Virginia†: Semiannual examinations, February and September. Apply to Russell M. Cox, M.D., Sec., State Board Medical Examiners, 509 Professional Bldg., Portsmouth. Examinations held in Richmond.

Washington†: Annual examination, May. File applications by April 1. Apply to Professional Division, Department of Licenses, Olympia. Examinations held in Seattle.

Wisconsin*: Thrice yearly examinations, April, Mid-September and at the discretion of Examining Committee. File applications at least two weeks in advance. Apply to Emma Zitzer, Sec., Physical Therapy Examining Committee, 207 North Brooks St., Madison 5. April examination held in Milwaukee; September examination held in Madison.

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* Information regarding examination dates and/or place of examination will be provided upon receipt of application.

† Examination provided by Professional Examination Service, American Public Health Association, 1790 Broadway, New York 19, New York.

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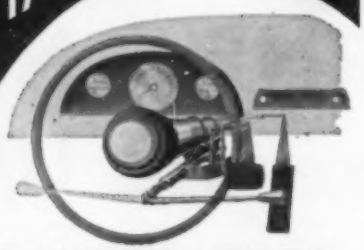

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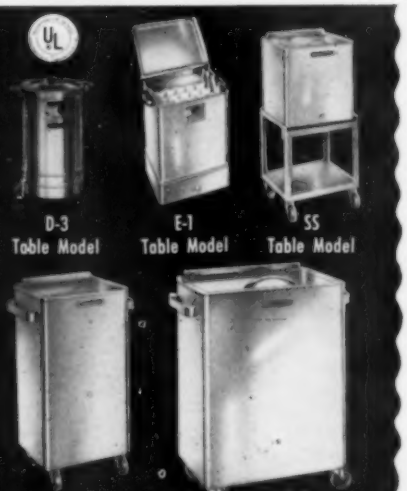

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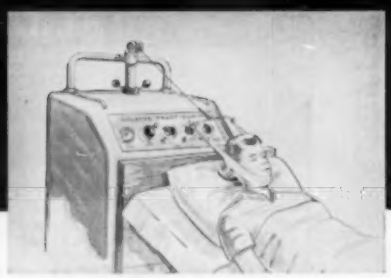

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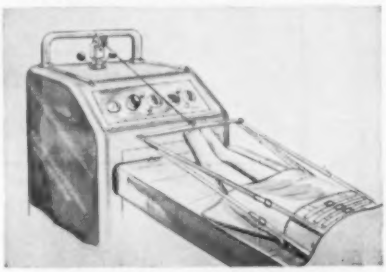

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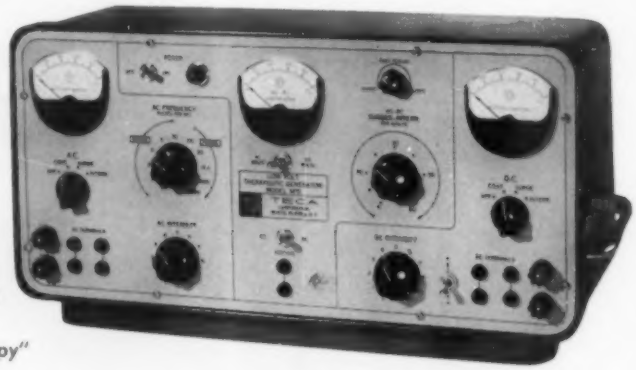

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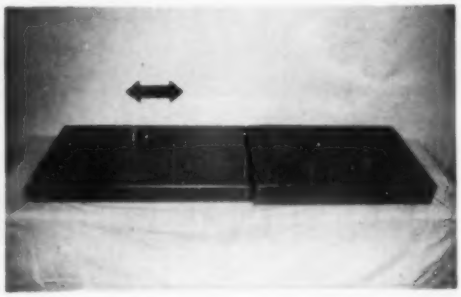

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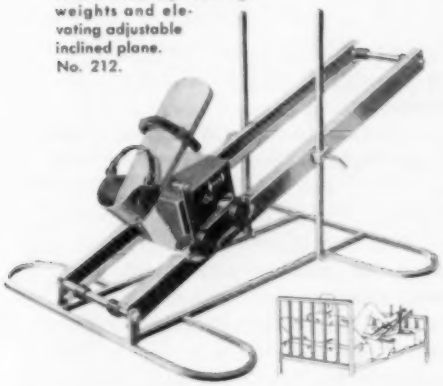

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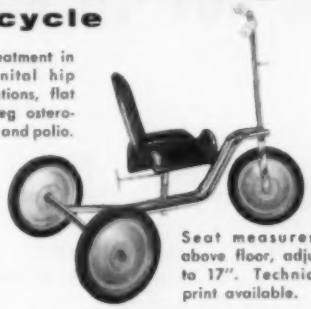

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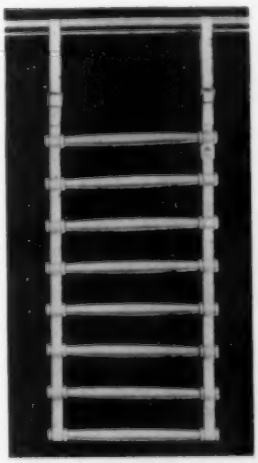

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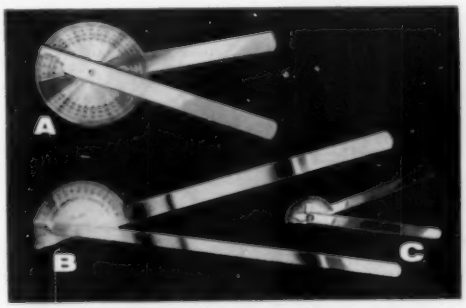

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About a week ago four or five R.P.T.'s were here at the plant while on a visit to Los Angeles. Naturally, I was happy that they took the time to come out and say a few kind words, and it was a pleasure to show them around the plant. The reason that I mention this, though, is that they showed some surprise when I mentioned that although *we* built the plant, we immediately sold it to an investment firm and then leased it back for our operation. On the surface it does sound rather strange, but it's a practice that has become relatively common under today's tax structure.

Actually, leasing of buildings and equipment is getting to be a real answer to the problems of limited capital and high taxes—as seen, for instance, in the automobile lease, the real-estate lease, and even the leases on such items as electronic brains and railroad cars. In fact, it is to meet these same capitalization problems that we have recently pioneered the first manufacturer's program for the leasing of medical electronic instruments.

According to Clay Williams, head of our Physical Medicine Department, we have several hundred Ultrasounds, Diathermies, Vibra-Baths and Muscle Stimulators now installed under our medical equipment lease plan. Leasing has evidently turned out to be extremely valuable to many institutions that have never before been able to "afford" a well-stocked physical therapy department.

I don't know what your situation is or how your department is set up. But, if you want to be assured of physical therapy equipment that is always up-to-date, that requires no great capital investment, that enables you to find a significant tax advantage, and still offers you the opportunity to convert to purchase at any time—well, if this sounds like it fits *your* needs, drop me a line. I think you'll be glad you did!

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Articles

Emergency Care in a Physical Therapy Section*

John C. Foundas, M.A.† and Walter J. Schmidt, M.D.‡

Emergencies can arise in a physical therapy department, and the therapist must be prepared to give first aid. It is the purpose of this paper to outline measures that can be taken by the worker, before the arrival of the attending physician. In all instances, the responsible physician should be notified as soon as possible.

In a small general hospital, members of the medical staff are usually present only during "rounds" in the morning, and are seldom "in the house" again until evening, when the physical therapy unit is normally closed. Thus, for most of the therapist's working hours, the physicians are in their offices which are usually some distance from the hospital. In an emergency, time is a factor and we should be prepared to meet the situation. Therapists are in direct contact with patients and are professionally and legally responsible for their safety. Therefore, we should be intimately aware of the recommended technics of first aid.

A first aid kit should be maintained in the physical therapy department. It should be in a conspicuous place and relatively close to the area of greatest use. The contents of the kit should be ordered by the physician-in-charge, and standing orders for emergency care should be written by the physician. The basic principles outlined can be adopted by other disciplines, such as occupational therapy, x-ray, and laboratory departments. The following is a suggested kit. The physician-in-charge may also wish to leave standing orders to cover certain emergencies.

1. Sterile dressings (2-inch and 4-inch squares) in sealed envelopes
2. Roll of adhesive
3. Roller gauze
4. Absorbent cotton, roll, sealed
5. Bandage scissors
6. Spirits of ammonia (2 to 4 ounces)
7. Perles of ammonia (6 to 12)
8. Abdominal binder
9. Two or three tongue blades bound together with adhesive tape (for use as a mouth gag)
10. Plastic mouth to mouth artificial respiration tubes (adult and child sizes)
11. Sterile towels
12. Sterile saline solution
13. Sterile pressure dressings

Aspiration of Foreign Bodies

An aspirated foreign body is defined as any solid or semisolid material that has entered the bronchial system.[1] It may have originated either from within the body (for example, a tooth or vomitus), or from without (dentures or nail). Carelessness is often a most important contributing factor.

Symptoms may vary from mild distress to death due to asphyxia depending upon the size and location of the foreign body. Coughing, gagging, choking, or otherwise impaired respirations and cyanosis usually are evident. If the object is dislodged from the trachea and passes through to a bronchus, the symptoms may cease for a few days or weeks, only to recur with symptoms suggesting a simple pneumonia. If one suspects that the patient may have aspirated a foreign body, even though the initial symptoms have disappeared, he should make this known to the attending physician.

Muschenheim[1] suggests that attempts at digital removal or inversion of the patient to dislodge the object should not be contemplated due to the danger of impaction of the object in the larynx. Immediate bronchoscopic removal by the physician is the treatment of choice.

* The authors wish to state that the comments and suggested procedures herein described are not necessarily those of the Veterans Administration, and in no way constitute policies of the Veterans Administration.

† Chief, Physical Therapy, Veterans Administration Hospital, Miles City, Montana.

‡ Staff Physician, Veterans Administration Hospital, Miles City, Montana.

One should reassure the patient that the physician has been notified and the patient should maintain the position of greatest respiratory comfort, which is usually seated or semi-reclining. Administration of fluids by mouth should be avoided. Added comfort can be given by opening the window and loosening the clothing about the patient's neck.

CORONARY HEART DISEASE

Angina pectoris (cardiac pain associated with stress), is the result of a relative inadequacy of the coronary circulation. It is often precipitated by exertion or emotional stress. The usual chief complaint is severe pain that develops substernally and often radiates down the left arm or into the head and neck. Pain in the right arm is rare. The patient may define the pain as a crushing or squeezing sensation rather than a sharp knife-like pain. Other symptoms may be dizziness, faintness or dyspnea. The duration of the attack is relatively short but may persist.

First aid treatment consists of placing the patient at rest in a position most comfortable to him, reassuring him that medical attention is forthcoming, and securing an environment conducive to respiratory comfort.

If the patient has had previous treatment for coronary disease, he may have in his possession amyl nitrite ampules or glyceryl trinitrate tablets. If so, one should crush an ampule of the former in a handkerchief and allow him to inhale it or assist him in placing a tablet of the latter under his tongue. Both drugs are effective vasodilators and will usually relieve uncomplicated angina pectoris. *If relief is not obtained within a few minutes, the medication should not be repeated.*

Myocardial infarction (coronary thrombosis or coronary occlusion) is characterized by severe substernal oppression and pain, shock, and often death.[2, 3] It is usually preceded by an occlusion of one of the major arteries of the heart. Frequently there is a history of angina pectoris or of hypertensive vascular disease.

The most common symptoms are severe substernal oppression (similar in location to that of angina pectoris, but not usually relieved by nitrites) and dyspnea. Nausea, vomiting and signs of shock (such as a weak pulse and cool moist skin) may be present. The patient often complains that the crushing substernal oppression prevents him from breathing properly, and he may express a fear of impending death.

Emergency treatment is directed toward absolute rest, prevention of shock, and assistance with respirations, as needed. Shock prevention measures will be discussed later. If oxygen is available, it may be given to relieve dyspnea. Reassure the patient that medical attention has been summoned.

ELECTRIC SHOCK

The physical therapist should see that the wiring of his equipment is in the best state of repair at all times, shockproof equipment is being used, and that every precaution is being taken to avoid hazardous exposure of the patient. Worn and frayed wires should be replaced and loose connections should be properly secured.

The determining factor in fatal electric shock is not always the amount of current to which one is subjected. McConnell[4] points out that current of a few cycles can cause death if the individual is well-grounded even at voltages commonly used in homes (110 to 115 volts), whereas, alternating currents of high voltages can be relatively harmless if they are of a very high frequency. Under proper conditions, electric currents of sufficient magnitude affect the heart or the respiratory system; that is, currents of low tension produce fibrillation of the heart, whereas, currents of high tension cause respiratory paralysis.

Electric shock may cause momentary or prolonged loss of consciousness, burns, and convulsions. One first should remove the individual from the current source and avoid contact oneself. If possible, the current should be shut off. If the patient is unconscious, artificial respiration should be started immediately. The mouth to mouth method of artificial respiration (as discussed later) is an effective one. Even a delay of seconds can prove fatal. Continue artificial respiration until the physician arrives. McConnell[4] cites a case in which the person was revived following eight hours of effort, and he suggests that this measure continue until recovery or rigor mortis occurs.

EPILEPTIC CONVULSIONS

The seizures of epilepsy are unpredictable and may happen at any time. If the preliminary phase of the attack is prolonged, the patient may utter a cry and show localized evidence of muscle twitching. If he is observed in this phase, time may permit his being caught and lowered gently to the floor. Nothing can be done to stop the attack at this point, but every effort should be made to prevent injury. The patient usually is observed only after he has fallen and the con-

vulsion has begun. A padded wooden wedge should be placed and held between the teeth to prevent the patient from biting his tongue or cheeks. Several tongue blades taped together with adhesive tape make a suitable mouth gag. Unpadded metal objects should be avoided because of the danger of injuring the mouth. The therapist should not insert his fingers into the patient's mouth. The subject's clothing should be loosened and no effort should be made to resist forceably the muscular movements of the attack. It is important to prevent the patient from striking surrounding objects. As the seizure subsides and the patient becomes less rigid, some danger of his swallowing his tongue may arise; therefore, the head and neck should be positioned to keep the tongue from falling back, as described later in the mouth to mouth method of artificial respiration. A few patients develop a postepileptic manic state and may require some restraint to prevent injury to themselves or others. The time interval from aura to cessation of movements may be from one-half to five minutes or longer.[5] Incontinence of urine and stool may occur.

The physical therapist should note the site of the initial clonic movements and the pattern of spread to other muscle groups and report it to the attending physician, since this pattern of spread may provide a clue to the localization of a focal brain lesion.[5]

When the convulsion is over, it is best not to question or otherwise disturb the patient, since he is usually a sensitive person and easily embarrassed by his disease. During the postconvulsive state the individual is usually drowsy and fatigued, and a period of absolute rest is indicated. Early activity may trigger another attack.

FRACTURES

The principle function of the observer in this emergency is to recognize the fracture, and to splint and immobilize the fracture site without moving the part. The physician should be notified promptly. Aids[6] in recognizing a fracture are: (1) the individual may have felt the break; (2) the limb may be out of line, as compared to its counterpart; (3) one may note a broken or jagged bone by touch; (4) there may be pain in the limb, especially at the fracture site; (5) movement may create localized sharp pain and a grating sensation (this should not be sought deliberately).

If one suspects that a fracture has occurred, one should keep the patient quiet and advise him not to move. If the individual is in considerable pain, shock prevention measures are indicated. If a fracture is obvious, splinting of the limb can be done while waiting for the physician. Nothing elaborate is necessary or desirable. The mere placing of sandbags or rolled pillows along the sides of the limb to restrict motion is adequate until medical attention arrives.

HEMORRHAGE

Lacerated wounds may be suffered by patients through accidental falls, through convulsive seizures, or from accidents in handling the equipment. Incised wounds from sharp objects such as broken glass are more apt to bleed profusely than contused lacerations. The first objective is to stop the bleeding. This may be done with a pressure dressing, digital compression, or occlusion of the open vessel. Generally, most hemorrhage involving venous bleeding can be controlled by a pressure dressing and elevation of the part. When hemorrhage has been controlled, the pressure dressing is left in place until the physician arrives.

PULMONARY HEMORRHAGE

Hemoptysis or pulmonary hemorrhage may be a complication of many diseases of the lungs, including pulmonary tuberculosis, tumor, and bronchiectasis. The hemorrhage may be minimal with production of a few milliliters of blood, to massive amounts of several hundred milliters at a time.[7] The latter is quite unusual however, except over a considerable period of time, and very rarely causes acute exsanguination. The blood is usually bright or dark red, often clotted, and at times frothy because of mixture with air. Acute anxiety may be associated with severe bleeding. An important part of first aid is reassurance. Usually, the patient is most comfortable in a semi-sitting position and turned toward the affected side, if this is known.[7] Full recumbency usually results in paroxysms of coughing.

TRAUMATIC SHOCK

Shock is commonly associated with loss of blood volume which may be associated with external or internal bleeding. Much tissue fluid and blood may be lost through wounds or by infiltration into injured tissues. The degree of shock is proportional to the reduction in the volume of circulating fluid. Shock may also be aggravated by rough handling of the patient, and it develops more readily in an older person.

Signs of shock are: cold clammy skin, a feeble or imperceptible pulse, shallow respirations, and

nausea. It is best to anticipate the development of shock in any seriously injured person and to start preventive measures. Prevention is much better than cure.

First aid measures are important and should be started promptly. The patient should be in a supine position with the head low to encourage the flow of blood to the head and chest region where it is needed most. In fact, raising the patient to a sitting position may result in faintness of syncope. The lower extremities should be elevated either on pillows or by raising the foot of the table or couch, unless the patient complains of dyspnea or if severe head injury is involved. Maintaining body heat is paramount, not the mere addition of external heat. The temperature of the environment and that of the patient is the determining factor. If the external environment is quite cold, heat applied in the form of hot water bags may be advisable as well as adequate covering with blankets. However, extreme care must be taken that the hot water bags be kept away from direct contact with the skin by several layers of toweling. Severe burns have resulted from their careless use in unconscious patients.

STRANGULATION

Self-inflicted strangulation through hanging is always a hazard where mentally disturbed patients are being treated. Rope, wire, or articles of clothing may be used at times by devious and ingenious methods. Death may be from compression of the trachea with suffocation or, if the drop was of sufficient force, death may result from damage to the cervical spinal cord from fracture of cervical vertebrae with resulting respiratory paralysis.

There may be a possibility of reviving the patient. The pulse may be perceptible, the face is usually cyanotic and congested. The conscious patient may be found in a state of excitement or desperation.

First aid is directed toward removing the noose. If an assistant is nearby, he should support the body as the rope is cut. Artificial respiration should be started immediately. While this is being given, evidence of cervical dislocation or fracture should be noted. If however, there are no signs of life, and rigor mortis is well-established, the body should be released from the noose. The general area should be left undisturbed for purposes of investigation, and the authorities notified immediately.

"SWALLOWING THE TONGUE"

In an unconscious person the relaxed condition of the tongue and jaw permits the tongue to fall back and occlude the hypopharynx (the area located between the posterior pharyngeal wall and the base of the tongue). This situation is erroneously referred to as "swallowing the tongue", and may result in severe difficulty in respiration. The situation can be relieved by placing the individual in a prone or lateral position with the head tilted to the side, thus allowing the tongue and jaw to fall forward creating an air passage. If the patient is in a supine position, his head should be tilted back as far as possible so the front of the neck is stretched with the chin in a jutting out position. Do not allow the chin to sag. Cullen and Gross[8] state that the worst possible position is one in which the patient is supine with the neck flexed and the head resting on pillows. If the aforementioned maneuvers are not successful, open the patient's mouth with a mouth gag (of the type previously mentioned), grasp his tongue with cloth covered fingers, and pull it forward to free the obstruction.

SYNCOPE

Clinically, syncope is a transient loss of consciousness associated with loss of muscle strength and the ability to maintain the upright position. It is often the result of a defect in the regulatory mechanisms which the body uses to maintain a stable blood pressure and circulation. In most instances, syncope is a symptom rather than a disease itself. Generally speaking, it is the result of impaired cerebral circulation. Psychologic mechanisms may trigger the disturbance of circulation.

A fall in arterial blood pressure is one of the most important etiologic factors and probably accounts for the greatest number of cases. Psychologic factors such as fear, anxiety, sight of blood, receipt of bad news, or pain may result in vasodepressor syncope through vasoreflex mechanisms. Anemia, reduction in blood volume, or peripheral vasodilatation may produce the same effect. In the presence of a defective blood pressure regulating mechanism, orthostatic hypotension with syncope may result in response to postural changes.

A condition resembling syncope may occur in hysteria, but a less profound state of unconsciousness results. In fact, Wechsler[6] states that it is questionable whether the patient is entirely unconscious. Another type of syncopal episode may result from hyperventilation. This is usually psychogenic, but may occur when certain drugs, particularly the salicylates, are taken in excess. Consciously or subconsciously the patient hyper-

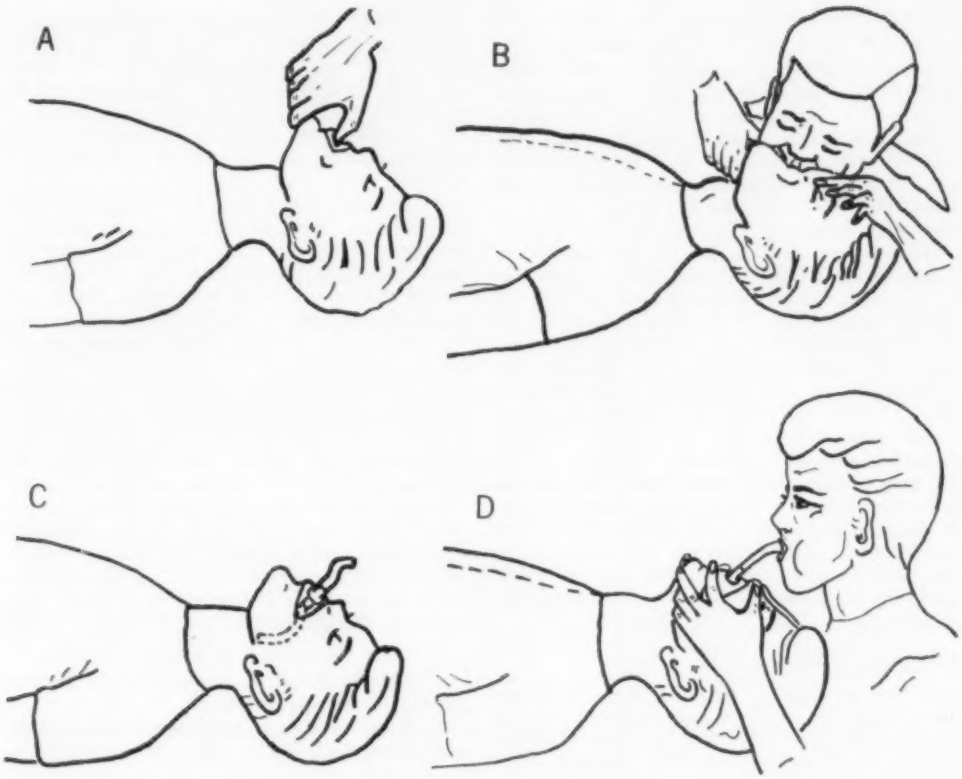

FIG. 1. A, technique of lifting jaw for direct mouth to mouth artificial respiration; B, direct mouth to mouth artificial respiration (note the continued traction of jaw, compression, of the nostrils, and mouth to mouth contact); C, artificial airway tube in position; D, technique of mouth to airway artificial respirator (note the positioning of operator's fingers in relation to flange of airway tube and patient's jaw).

ventilates and usually experiences numbness and tingling of the face and extremities.[9] Dizziness, lightheadedness, and blurring of vision may also be present.

Migraine may be associated with syncope in the pre-headache phase, although dizziness, lightheadedness, and visual disturbances are more common. Hypertensive individuals may experience periods of faintness or lose consciousness, perhaps in response to the change in calibre of the cerebral blood vessels.[9]

The most important factor in first aid for syncope is to place the patient in a horizontal or recumbent position with his head low, until recovery is complete. If the patient assumes the upright position too soon, syncope may recur. With the head low, a better cerebral circulation is maintained. The patients' clothing should be loosened about the neck and chest, and adequate ventilation should be provided. Recovery is often hastened by having the patient inhale the fumes from a perle of ammonia, crushed and held close to his nose,[6] or by having him inhale a few whiffs of smelling salts. Never offer fluids to an unconscious person. If the patient feels faint, it may be sufficient for him to assume the horizontal position with his head lower than his feet. If this is not possible, have him sit with his head low between his knees, and instruct him to breathe deeply.

WOUND DISRUPTION

Physical therapists are often called upon to provide conditioning exercises or other measures during the relatively early postoperative period since early ambulation has been found to be so beneficial. Wound disruption is a possibility in such patients. The sudden appearance of straw-colored fluid from a recent wound would lead one to suspect that such a complication had occurred, and with it the risk of evisceration, if the wound is abdominal.[10] A glance beneath the dressing may disclose extruded omentum or loops of bowel. The wound and the viscera should be covered with sterile toweling immediately and this should be moistened with sterile saline solution. Then an abdominal binder may be applied. Any dressing should be left in place and reinforced with a sterile towel. This helps to prevent further extrusion and contamination. However, if no dressing was involved a clean, freshly laundered, towel can be used as a compress. In the absence of sterile saline solution, distilled water may be used to moisten the compress. Prior to treating the patient, have him lie down and be quiet, apply the compress, and summon the responsible physician.

ARTIFICIAL RESPIRATION

A new concept in artificial respiration has been adopted using the mouth to mouth method of forced breathing.[11,12] It is probable that this method is superior to any of the previous methods used to provide pulmonary exchange of air in the patient. Its satisfactory performance however, is dependent entirely upon maintaining a good airway by keeping the tongue from dropping back and obstructing the hypopharynx. This is done best by keeping the head in extension at the atlanto-occipital joint. Do not let the chin sag and do not place the head on a pillow or other elevation.[12] In the two procedures which follow, the mouth gag should be used to open the patient's mouth.

1. Place the patient on his back. No pillow.
2. Take a kneeling position to the side of the patients' head.
3. Remove any foreign matter, such as dentures, from his mouth.
4. Insert the thumb between the teeth, and with the thumb and index finger, grasp the mandible and pull it upward, forcefully opening the mouth a small distance at the same time. (Fig. 1A.)
5. Compress his nostrils with the thumb and index finger of your other hand.
6. Inspire deeply and place your mouth over the patient's mouth and your thumb. Blow forcefully enough for the patient's chest to rise. Keep his head tilted backward and his jaw upward by maintaining traction on the jaw. (Fig. 1B)
7. Continue the inflation at a rate of twelve to twenty times per minute until medical help arrives.
8. Air may escape into the patient's stomach and may be displaced by placing the palm on his upper abdomen and pressing down until the air is expelled. If the chest does not rise, the airway may be partially obstructed, the mouth to mouth seal may be inadequate, or the air may be entering the stomach. These features should be checked.

Plastic airways are now available (Resusitube® is an example). Experimental work indicates that even more effective ventilation may be obtained with such a tube and aesthetically it is far preferable.[11] Certain modifications are necessary in the use of the tube. However, positioning the head and neck remains essential. For a child, use a smaller tube which is available. In either method, *air is not blown forcefully into a child's lungs*, but is "puffed" into it by the cheeks. Proceed as follows:

1. Place the patient in a supine position.
2. Place yourself in a kneeling position at the top of the patient's head.
3. Grasp his tongue with clean cloth or gauze and pull it forward, slip the airway tube over his tongue, following the curve of the tongue. (Fig 1C.)
4. Keep the patient's nostrils closed tightly by pressure between your thumbs.
5. Apply firm pressure on the flange of the tube with your index fingers to prevent air leakage; with the remaining fingers of each hand maintained under the angles of the jaw, hold the patient's chin upward and toward you. Keep the head extended. (Fig. 1D.)
6. Inhale deeply and blow into the tube. When the patient's chest fully expands, remove your mouth and allow his lungs to passively expire. Continue at the rate of twelve to twenty inflations per minute.
7. Continue until the patient breathes on his own or until medical attention arrives.

SUMMARY

The various emergencies which may arise during the course of treating patients in a physical therapy department have been reviewed, and simple first aid measures have been presented

for use in these emergencies. The latter has included a brief outline of mouth to mouth and mouth to airway artificial respiration. A list of items for a first aid kit in a physical therapy department has also been presented. It is hoped that the reader of this paper will be sufficiently stimulated to consult more comprehensive sources of first aid techniques.

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Movements at the Sternoclavicular and Acromioclavicular Joints

Anna M. Conway, M.S.*

A survey of the literature reveals that studies have been made of the combined movements of the shoulder girdle and shoulder joints, and of the shoulder joint only. However, there are very few studies of the movements of the shoulder girdle alone. By the use of roentgenography on living subjects, Stookey[1] considered sternoclavicular and acromioclavicular joint movements as scapular rotation, during elevation of the humerus at the scapulohumeral joint. Tracings from the roentgenograms showed the relation of the scapula to the humerus. A perpendicular drawn through the head of the humerus was 0°, the line of reference. A line drawn along the axillary border of the scapula and through the inferior angle of the glenoid cavity indicated scapular deviation of −35° from the line of reference. Another line was drawn through the longitudinal axis of the humerus and the angle formed by this line and the perpendicular indicated humeral elevation. Upon elevation of the arm, the scapula rotated to a position of +15° and the humerus moved to 178° from the line of reference. This scapular rotation, as defined, was attributed to the movements at the sternoclavicular and acromioclavicular joints and contributed approximately 50° of the 178° of humeral elevation. Fisk[2] studied the movements of the shoulder joint of three healthy young women by the use of fluoroscopy and x-ray. The results showed that practically 50 per cent of the 170° of humeral rotation is a result of movements of the scapula and clavicle. Positions were filmed showing the movements of medial and lateral rotation while the arm was at the side and in elevation and abduction above the head. From these observations it was shown that the range of movements at the scapulohumeral joint is much more limited than is commonly supposed. Bettmann[3] considered a shoulder joint complex as the anatomic and functional unit represented by the scapulohumeral joint, the acromioclavicular, sternoclavicular and thoracoscapular space, and the connected muscles and capsule apparatus. The scapulohumeral joint can be compared with a crane; the range of motion is increased due to the two movable arms, the spine of scapula and the clavicle. The role played by these two arms in most of the scapulohumeral joint movements is that of increasing

* Instructor, Department of Anatomy, St. Louis University School of Medicine, St. Louis, Missouri.

motion from 20° to 60° in a single plane. However, he stated that any portion of the shoulder joint complex can substitute in function for any other to a great extent. Jones[4] made radiographic measurements with the subject in standing position in front of a vertical (plumb line) copper wire. He studied the synchronized movements of scapulohumeral joint as the humerus was fully abducted approximately 170° to 175° (coronal plane movement). The vertebral border of the scapula and the spinous processes of the vertebrae were used as lines of reference determining the angle measured. During the 170° to 175° of humeral abduction, the vertebral border of the scapula rotated laterally 50°.

Mollier (1899),[5] Codman (1934),[6] Bosworth (1941),[7] Inman (1944)[8] and Abbott (1954)[9] have studied some movements of both the sternoclavicular and acromioclavicular joints. They agreed that the sternoclavicular joint has a wide range of movement around all axes except the longitudinal one; a limited amount of movement occurs around this axis. Mollier dissected a cadaver which had been placed in an upright position suspended by head and pelvis, thus obtaining a position similar to an upright position in the living. Each muscle was dissected in its position, then the fibers of each muscle under tension were dissected and measured; the direction of pull was noted, and attachments and weight of lever arm were recorded. From these records, the exact muscle form was reconstructed with strong string representing muscle fibers. These fibers were put together like the muscles and attached on a wooden model of the thorax. Strings representing muscles were attached over pulleys to a panel. Buttons on the panel could be pushed and tension equal to the movement and force of a particular muscle (determined at time of dissection) could be reproduced. The axes for the movements were visualized by the use of needles, and the movements performed by the model were recorded on a scale. With this model, not only range but also the action and force of each muscle during the action could be measured. The axes at the sternoclavicular joint were called vertical (forward and backward movements), sagittal (upward and downward movements) and horizontal (clockwise and counter clockwise movements). He demonstrated that every change in position of the clavicle reflected movement at the acromioclavicular and sternoclavicular joints. If either or both joints should be fixed and immobile, the total range of shoulder motion would be markedly impaired. Codman, by use of radiographs of living subjects, stated that when one reaches upward in any plane the scapula rises on the chest wall about 45° at the sternoclavicular joint. A greater range of movement can be obtained during elevation at the sternoclavicular joint if the humerus remains in anatomical position. In his roentgenographic study of living subjects, Inman found that each part of the shoulder joint complex (sternoclavicular, acromioclavicular, scapulothoracic and scapulohumeral joints) was an independent entity, capable of independent motion, but all contribute to the total functional mechanism of the extremity. Abbott explained that the "S" shape of the clavicle provides a crank-like action which allows considerable movement at the shoulder girdle joints during the movement of abduction of the humerus and upward rotation of the glenoid fossa.

Various opinions are presented in the literature concerning the range of movement at the acromioclavicular joint. But much of the reported variation can be accounted for by the different methods and objectives the specific author was attempting to accomplish. For example, Bosworth did an extensive fluoroscopic study of several thousand shoulders and concluded that the acromion moves to such a slight extent upon the clavicle during unrestricted movement of the upper extremity that he was never able to detect the exact extent of acromioclavicular movement. Mollier (1899) found from 15° to 29° of movement at the acromioclavicular joint in a single plane which would appear to be in contrast, but he was recording shoulder girdle movements. The axes of movement at this joint were termed vertical, sagittal and frontal.

Others authors have mentioned isolated ranges of movement at the acromioclavicular joint. Bryce[10] stated that the angle between the clavicle and the spine of the scapula diminished at the acromioclavicular joint during protraction. In his studies of the function of the clavicle, Inman noted that the total range of movement at the acromioclavicular joint was 30° on elevation of humerus at the scapulohumeral joint producing upward rotation of the glenoid fossa. No appreciable motion occurred at this joint during protraction and retraction of shoulders, nor is there any great rotation of the clavicle. Abbott stated that during the movement of protraction and retraction in the average individual, the scapular movement at the acromioclavicular joint accounts for 15° of the total range.

The purpose of this study was to devise instruments for measuring direction and range of movement at the sternoclavicular and acromioclavicular joints, and to try to obtain additional

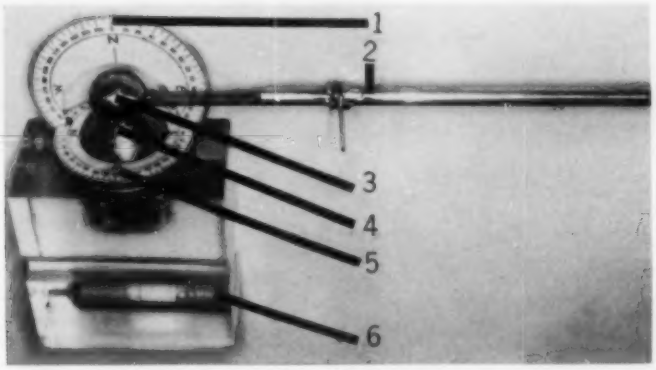

FIG. 1. Anterior view of apparatus for measurement of the sternoclavicular joint. Number 1 is the scale for reading the changes in the movements in the coronal plane; 2, the lever arm; 3, the ball which rests in magnet; 4 and 5, scale for reading the changes in the movement in the horizontal plane; and 6 is the level to indicate that the base was kept at starting position.

FIG. 2. Apparatus for measurement of movement of the sternoclavicular joint in the position in which it was used for the left side.

or more accurate information on shoulder girdle movements by the use of these instruments. For each of the two joints an instrument was constructed that allowed simultaneous determination of coronal and horizontal plane movement. By using these instruments, information was obtained about ranges and directions of movements in these two planes during performance of elevation, depression, protraction, retraction, upward and downward rotation of the glenoid fossa of the scapula.

In this study comparisons were made of the records of right and left sides of the same subjects, of males and females, and of repeated trials of selected subjects.

APPARATUS

The original apparatus for measuring movements of the sternoclavicular joint consisted of a camera tripod swivel with extending arm, mounted on a rectangular base. The swivel could be tightened or loosened as desired by means of

FIG. 3. Side view of apparatus for measurement of movement of the acromioclavicular joint. Number 1 is the level to indicate that the sliding arm is horizontal; 2, the base through which the long arm slides; 3, scale used to register the movement; 4 and 5 indicate where the rod to measure coronal plane movement passes through the long arm of apparatus, 6 point of vertical rod on root of spine of scapula, and 7 marks clavicular rest.

a screw. A level was mounted on the base as an indicator that the base was kept at starting position as the instrument arm followed the movements of the clavicle.

Movements of the clavicle in the inferior-superior and in the anterior-posterior directions could be followed by the instrument arm but there was no method by which the extent of change could be read directly. Scales were devised to express the movement of the apparatus in terms of degrees. This apparatus has been revised (Fig. 1); a magnet is now used to hold the lever arm instead of the swivel and screw. This affords greater freedom of movement in a more compact unit allowing the axis of the lever arm to approach more closely the axis of the joint. Scales were placed directly on the new apparatus to facilitate the readings of the extent of change of position. A level mounted in the base is still used as an indicator that the base is kept at starting position. Figure 2 shows the apparatus in position on a subject.

The instrument for the acromioclavicular joint consists of a sliding device that follows the root of the spine of the scapula as it changes in relation to an arbitrarily determined point on the clavicle. (Fig. 3.) The changes in the acromioclavicular joint (horizontal plane movement) were determined by measurement of the sides of the triangle formed by a line along the clavicle between the arbitrarily determined point and the acromioclavicular joint, a line from the root of the spine of the scapula to the acromioclavicular joint and the distance between the root of the spine of the scapula and the arbitrarily determined point on the clavicle.

The clavicular rest is on a swivel to provide ease in movement without disturbing the point of contact on the clavicle. A pointer perpendicular to the sliding device is placed at the root of the spine of the scapula. The anterior-posterior distance between the clavicular rest and the root of the spine is read from the scale (3) past which the long arm slides through the base. Changes of movement measured are those which occur in the position of the root of the spine of the scapula. Figure 4 shows construction of the triangle and how the range of movement is determined. Inferior-superior deviations are measured by the rod (Fig. 3 [6]) sliding through the end of the arm. The rod was measured from the horizontal sliding bar to its inferior tip which rested on the root of the spine of the scapula. This distance was used as side A-B in the triangle shown in Figure 5.

The readings in the anterior-posterior direction

indicate the length of the base of the triangle and their changes determine the changes in the degrees of the angle representing the acromioclavicular joint. The changes in the inferior-superior direction are determined by the deviation of the root of the spine of the scapula from the base of the apparatus, as it describes an arc with the line from the root of the spine of the scapula to the acromioclavicular joint as a radius.

METHOD

Sixty subjects (thirty female, thirty male) between the ages of twenty and thirty-five years of age were selected at random.

For the measurement of the sternoclavicular joint the subject was asked to sit with back straight and arms hanging at rest. To obtain readings for the normal position of the clavicle, the apparatus was placed with the fulcrum of the lever on the sternoclavicular joint; the level bubble was centered. The arm of the apparatus was kept in contact with the medial part of the clavicle in this position and throughout the movements later. When the normal position was determined, the apparatus was removed from the subject and the degrees in the coronal and horizontal plane were read directly from the scales.

After this position was recorded in the two planes of movement, the apparatus was again placed on the subject in similar manner for each movement of the sternoclavicular joint for each side of the subject. All other recordings were considered deviations from normal.

The instructions for upward rotation of the glenoid fossa were to do maximal flexion and lateral rotation of the scapulo-humeral joint, and for downward rotation of the glenoid fossa, extension and medial rotation of the humerus. A deviation in the level indicated any lateral movement so that the individual was informed if extra movements were present.

The same sixty subjects were measured for movements in the acromioclavicular joint. The subjects were asked to sit with back straight, arms in resting position at the sides. The clavicular rest was placed on the clavicle at an arbitrarily determined distance from the acromial end. This distance was usually just over half the length of the clavicle from the acromial end or on the convex portion, so that the foot plate rested on an area which provided maximum contact with the circumference of the clavicle during movements and comfort for the subject. Once determined, this distance was maintained throughout the rest of the movements on that side. The tip of the inferior-superior measuring rod was placed at the root of the spine of the scapula. After the apparatus was leveled and the screws were tightened it was removed from the shoulder. Three distances were measured: the distance between the clavicular rest and the acromioclavicular joint, the distance between the root of the spine of the scapula and the acromioclavicular joint, and the length of the sliding vertical rod between the horizontal sliding bar and its inferior tip (Fig. 3, [5 and 6]). A fourth measurement was arrived at by reading the scale (Fig. 3, [5 and 6]). This gave the position of the horizontal sliding bar.

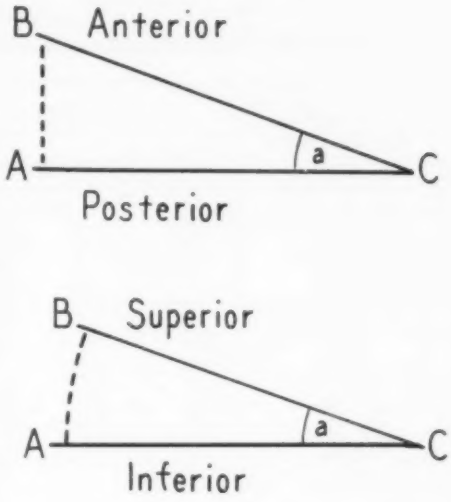

FIG. 4. *Top*, Represents the method used to determine the degrees of movement in the anterior-posterior direction at the acromioclavicular joint (point C). Line A-B represents the distance that may change; line B-C represents the arbitrarily determined distance marked on the clavicle; line A-C represents the line from the root of the spine of the scapula to the acromioclavicular joint. Angle (a) represents the acromioclavicular joint that may change as line B-C changes. *Bottom*, Represents the method used to determine the degrees of movement in the inferior-superior direction at the acromioclavicular joint (point C). Line A-B represents the approximate distance moved by the root of the spine of the scapula; line A-C represents the line from the root of the spine of the scapula to the acromioclavicular joint; line B-C also represents the line from the root of the spine of the scapula to the acromioclavicular joint; either A-C or B-C may represent the starting position of the spine of the scapula. Angle (a) represents the acromioclavicular joint that may change as arc A-B changes.

TABLE I

Ranges in Degrees of Horizontal* and Coronal† Plane Movements During Elevation and Depression

Sex of Subject and Movement	Right				Left			
	Anterior	Posterior	Superior	Inferior	Anterior	Posterior	Superior	Inferior
Elevation, S.C.‡								
Female	7	30 (10‖)	11–48 (28)		21	35 (12)	12–41 (27)	
Male	19	27 (11)	8–48 (33)		9	32 (12)	14–47 (31)	
Elevation, A.C.§								
Female	28	4 (8)	14	14 (7)	14	2 (7)	13	17 (5)
Male	18	3 (8)	11	26 (8)	26	4 (8)	13	21 (9)
Depression, S.C.								
Female	18	6 (5)		1–27 (13)	14	7 (5)		0–20 (9)
Male	17	15 (6)		1–20 (11)	16	14 (6)	0	28 (11)
Depression, A.C.								
Female	17	6 (7)	16	7 (6)	27	3 (5)	16	18 (6)
Male	30	16 (9)	26	10 (8)	29	4 (9)	21	5 (9)

* Anterior - posterior
† Superior - inferior
‡ S.C. = sternoclavicular
§ A.C. = acromioclavicular
‖ Numbers in parentheses indicate averages

From this figure the anteroposterior distance between the clavicular rest and the root of the spine of the scapula was determined. From these four figures, triangles were constructed as shown in Figure 4, and starting "angles" were determined.

After the starting position was recorded, the apparatus was applied to the same points, right and left for each movement of the acromioclavicular joint. A comparison was made of the "angles" in other positions with those recorded for the starting position. Repeated measurements were made on eight subjects (five females, three males). Each of the eight subjects was measured three times with at least a week intervening between measurements.

Averages were used as criteria throughout the study, and these averages are for number of trials rather than number of subjects. There is a possible source of error resulting from the fact that the center of the joint and the center of the apparatus may not have coincided. The figures are not considered as absolute values.

RESULTS

Elevation. Sternoclavicular joint: In ninety-four (fifty-one female, forty-three male) of the

TABLE II

Ranges in Degrees of Horizontal* and Coronal† Plane Movements During Protraction and Retraction

Sex of Subject and Movement	Right				Left			
	Anterior	Posterior	Superior	Inferior	Anterior	Posterior	Superior	Inferior
Protraction, S.C.‡								
Female	29	0 (17‖)	20	20 (6)	29	0 (11)	17	17 (5)
Male	33	0 (16)	19	16 (7)	34	0 (13)	19	13 (6)
Protraction, A.C.§								
Female	21	5 (10)	18	10 (7)	28	0 (10)	25	10 (8)
Male	28	5 (11)	18	7 (8)	2–23 (12)		27	8 (10)
Retraction, S.C.								
Female	2–29 (14)		29	5 (7)	0	23 (11)	20	4 (7)
Male	2	30 (16)	22	4 (9)	1–27 (13)		24	8 (9)
Retraction, A.C.								
Female	8	14 (4)	22	17 (7)	16	21 (5)	15	16 (6)
Male	13	20 (6)	7	22 (8)	14	11 (5)	14	19 (6)

* Anterior - posterior
† Superior - inferior
‡ S.C. = sternoclavicular
§ A.C. = acromioclavicular
‖ Numbers in parentheses indicate averages

120 movements of elevation (or trials) the clavicle moved posteriorly as well as superiorly.

Table 1 shows that the range of movement in the coronal plane was greater on the right than on the left in both men and women. The range of the accompanying horizontal plane movement was also greater on the right than on the left in the male, but not in the female subjects.

In reference to average ranges (Table I), it will be noted that maximum variance for the respective groups was only 2° for a particular plane.

Charnock[11] measured the superior movement of elevation in one female subject by the use of radiographs. She found 33° of superior displacement of the clavicle. This was 5° or 6° higher than the averages for female subjects (Table I), but was approximately the averages for the male subjects. In Charnock's study the starting position for the clavicle was 10° of elevation and the movement terminated at 43° of elevation. The starting position for the sixty subjects in this study varied both from one side to the other and from one individual to another. The average range for female and male was 14° on the right side, and 17° and 18°, respectively, on the left side.

Acromioclavicular joint: For ninety-eight of

TABLE III

Ranges in Degrees of Horizontal* and Coronal† Plane Movements During Upward and Downward Rotation of the Glenoid Fossa

Sex of Subject and Movement	Right				Left			
	Anterior	Posterior	Superior	Inferior	Anterior	Posterior	Superior	Inferior
Upward Rotation, S.C.‡								
Female		6–47 (22‖)	3–32 (18)			2——39 (18)	3–29 (17)	
Male		6–41 (24)	7–41 (23)			1–39 (22)	5–36 (19)	
Upward Rotation, A.C.§								
Female	15——21 (7)			17–61 (34)	24——15 (8)			10–46 (30)
Male	40——16 (9)			17–52 (31)	19——13 (9)			16–48 (31)
Downward Rotation, S.C.								
Female	20——18 (6)		37——22 (10)		14——18 (6)		24—— 8 (9)	
Male	18——31 (8)		37——15 (14)		22——32 (8)		33——11 (11)	
Downward Rotation, A.C.								
Female	36—— 7 (14)		1–32 (17)		2–27 (13)		38—— 0 (17)	
Male	37—— 2 (15)		33——5 (17)		4–54 (21)		7–36 (21)	

* Anterior - posterior
† Superior - inferior
‡ S.C. = sternoclavicular
§ A.C. = acromioclavicular
‖ Numbers in parentheses indicate averages

the 120 movements of elevation, the root of the spine of the scapula moved in an inferior direction. This inferior movement was accompanied by a decrease in the distance between the root of the spine of the scapula and the clavicle in 109 (fifty-five female, fifty-four male) of the 120 trials.

Codman stated that for the movement of elevation there was 5° to 10° of motion in the acromioclavicular joint. To make a comparison between Codman's figures and the ones in this study, the magnitude of resultants of vector quantities were calculated from the averages of the two planes of movement. (Table I.) They were found to be between 9° and 12°.

It was found that, at the sternoclavicular joint in elevation, more movement takes place in the superior-inferior direction than in the anteroposterior direction, while at the acromioclavicular joint the amount of movement is nearly equal in the two planes.

Depression. Sternoclavicular joint: The inferiorly directed movement of the clavicle was accompanied by an anterior one in ninety-one (forty-five female, forty-six male) of the 120 trials.

According to Charnock, the clavicle moves downward from the starting position of 10° of elevation. In this experiment (Table I), downward movement was also demonstrated from the starting positions of 14° on the right side of both sexes, and 17° and 18° on the left side of females and males, respectively. This indicated that the normal postural position of the left clavicle was slightly more elevated in comparison with the right, for the majority of these subjects (forty-four of sixty). Because of the posture of the human and the influence of gravity, the resting position of the clavicle is depressed to a certain extent. Therefore, limitation of the movement of depression was experienced by the subjects. One female and one male (left side) actually experienced 0° of depression on the first trial. However, a repeated trial demonstrated depressions of 3° and 4°, respectively (their average starting position was 20° and 14° of clavicular elevation, respectively).

Acromioclavicular joint: The root of the spine of the scapula moved superiorly in eighty-eight of the 120 trials (thirty-nine female, forty-nine male). The inferior-superior movement of the root of the spine of the scapula was accompanied by the root moving anteriorly in 108 (fifty-two female, fifty-six male) of the 120 trials. The ranges and the averages are shown in Table I.

It was found that the greatest range of movement at the sternoclavicular joint was in the inferior-superior direction during depression, while the average range is nearly equal in both planes at the arcomioclavicular joint.

Mollier reported results of movement around the sagittal plane axis to be 20° for the combined movements of elevation and depression in the sternoclavicular joint, and 19° in the acromioclavicular joint. Sagittal plane axis is recorded as inferior-superior movements in this study. (Table I.) By adding the average ranges for elevation and depression from these tables, one finds that the combined movement was considerably higher than the 20° Mollier reported at the sternoclavicular joint, but less than the 19° he reported at the acromioclavicular joint.

Protraction. Sternoclavicular joint: In the performance of maximal protraction, the clavicle moved anteriorly in 114 of the 120 trials. In the six exceptions (four female, one right, three left; two male, one right, one left) protraction was not obtained when the subjects had instructions to perform protraction. When this occurred, it was only on one side of the respective subject, and the feeling of protraction apparently was accomplished through either humeral rotation or trunk rotation, which were not being recorded. After special instructions and calling attention to this factor, protraction was obtained, although it was the object of this study to avoid demonstration and special instructions so that normal movements for each subject would be obtained.

The movement which accompanied the anteriorly directed one varied considerably during protraction and is unpredictable, as indicated by the inferiorly directed movement for twenty-nine of fifty-six trials on female subjects and twenty-four of fifty-eight trials on male subjects. (Table II.)

Upon repeating the measurements on twenty subjects (ten female, ten male) the direction of movement in the coronal plane was unpredictable. In ten subjects (four female, six male) the direction of the coronal plane movement during the second trial was opposite that during the first trial. In eight of ten this situation occurred on one side only.

Charnock made the following statement in regard to protraction: "In moving without the arms there is a tendency to 'hunch' the shoulders in an attempt to increase the range of movement." In this experiment, the variability found would not substantiate Charnock's findings.

Acromioclavicular joint: During protraction in the acromioclavicular joint, the root of the spine of the scapula moved anteriorly in 116 of the 120 trials. The posterior movement of the root might be obtained by a slight "winging" of the scapula during protraction. The anteriorly directed movement of the root of the spine of the scapula was accompanied by a superiorly directed one in ninety-four (forty-three female, fifty-one male) of the 120 trials.

This study (Table II) revealed a higher percentage of movement in the anterior-posterior direction during protraction at the sternoclavicular joint; whereas, the higher percentage of movement seems to be in the inferior-superior direction at the acromioclavicular joint.

Bryce stated that the angle between the clavicle and the spine of the scapula diminished at the acromioclavicular joint during protraction. In this experiment, the diminished angle was demonstrated by anterior movement of the root of the spine of the scapula in all but four of the trials. (Table II.)

Retraction. Sternoclavicular joint: During maximal retraction, the clavicle moved posteriorly in 117 of the 120 trials. Three male subjects (right side) did not obtain retraction, although they had proper instructions and evidently thought they were performing retraction. During

the posterior movement, the clavicle moved superiorly in 101 (fifty-two female, forty-nine male) of the 117 trials. (Table II.)

Charnock stated that there was a tendency to elevate the clavicle upon obtaining maximal retraction. In demonstrating this superior movement, the female subjects were slightly more consistent than the male subjects.

Mollier reported 37° of movement around the vertical plane axis for the combined movements of protraction and retraction at the sternoclavicular joint. This movement is comparable to the anterior-posterior movements of protraction and retraction. (Table II.) The combined averages in this study are less than his 37°.

Acromioclavicular joint: The movement of retraction was accomplished by a movement of the root of the spine of the scapula in a posterior direction in thirty-one of fifty-five trials for female subjects, while the root of the spine of the scapula moved anteriorly in thirty-one of fifty-seven trials for male subjects. There was no measurable movement in the anterior-posterior direction for eight trials (five female, three male). The anterior-posterior movement was accompanied by the root of the spine of the scapula moving inferiorly in eighty-two (forty-four female, thirty-eight male) of the 120 trials. (Table II.)

It was found in this study (Table II) that, at the sternoclavicular joint during retraction, a higher percentage of movement occurred in the anterior-posterior direction. The higher percentage of movement was in the inferior-superior direction in the acromioclavicular joint.

Bryce stated that the angle between the clavicle and the spine of the scapula increased at the acromioclavicular joint during retraction. This was shown in the present data in only fifty-seven (thirty-one female, twenty-six male) of the 112 trials.

Mollier, Abbott and Inman considered protraction and retraction as a combined movement at the acromioclavicular joint. Mollier and Abbott found about 15° of combined movement. Inman stated that there is no appreciable motion that occurs at the acromioclavicular joint, the movement occurring was predominantly at the sternoclavicular joint. Mollier specifically stated that this 15° occurred around a vertical axis. By comparison, that would be anterior-posterior movement (Table II), the averages being in a range from 14° to 17°. Abbott measured bone displacement from radiograms, the specific axis of movement was not mentioned. To compare, the magnitude of the resultant of the vector sums of the averages (Table II) of the two planes of movement for both protraction and retraction were calculated, added and found to be approximately 20° for female and 23° for male.

Upward rotation of the glenoid fossa. Sternoclavicular joint: During upward rotation of the glenoid fossa, the clavicle moved posteriorly as well as superiorly in all but one of 120 trials.

By means of radiography Codman studied the displacement of bone structures during movements of "hunching" the shoulders and reaching upward in any plane. He found that in the process of reaching upward in any plane to the maximum, the scapula moved on the chest wall to about 45° of movement at the sternoclavicular joint. Inman used radiographs and examinations of live subjects, and found that the movement of elevation of the arm, whether by abduction or forward flexion, was accompanied by approximately 36° of elevation of the clavicle at the sternoclavicular joint. Abbott stated that the clavicle angles 30° upward with arm abduction of 180°. The 45° and 36°, respectively, are interpreted as inferior-superior movement and are both of a greater range than observed in this experiment, with Abbott's 30° within the range of the male subjects. (Table III.)

Codman also stated that the clavicle moves considerably higher in "hunching" the shoulder than in reaching upward. This was demonstrated clearly in 115 of the 120 trials in the present study.

Another finding of Codman's study, which substantiated Bryce, was that the acromial end of the clavicle passes backward and rotates slightly when the glenoid cavity is brought to look upward, as when the arm is raised above the head. Abbott's study showed that with arm abduction of 180° the clavicle angles backward about 35° at the sternoclavicular joint. Again the male subjects of this study are near that range with the female subjects higher. (Table III.)

Acromioclavicular joint: In all of the 120 trials in this report it was found that, during maximal upward rotation at the acromioclavicular joint, the root of the spine of the scapula moved inferiorly. The accompanying movement was an anteriorly directed one in seventy-seven (thirty-eight female, thirty-nine male) of the 120 trials.

Inman found the total range of movement at the acromioclavicular joint was approximately 30° with elevation of the arm, whether through abduction or forward flexion. If interpreted as meaning in an inferior-superior direction, this range is approximately the averages found in this

study, but lower than the ranges recorded in Table III.

For the movement of upward rotation of the glenoid fossa at the sternoclavicular joint, there seemed to be a higher percentage of movement in the anterior-posterior direction. At the acromioclavicular joint, the higher percentage of movement was in the inferior-superior direction.

Downward rotation of the glenoid fossa. Sternoclavicular joint: The clavicle moved in a superior direction during downward rotation of the glenoid fossa in ninety-six (forty-six female, fifty male) of the 120 trials.

The accompanying movement, either anterior or posterior, was variable and could not be predicted. The movement was directed anteriorly in fifty-five (twenty-nine female, twenty-six male) of 105 trials. Repeated measurements were taken on the same twenty subjects mentioned in protraction studies. Of these forty trials, fifteen varied, moving in an anterior direction at one time and in a posterior direction at another time.

Acromioclavicular joint: The root of the spine of the scapula moved in a superior direction during maximal downward rotation of the acromioclavicular joint in 118 of the 120 trials. The superior movement was accompanied by an anteriorly directed one in 116 of the 120 trials. (Table III.)

In this study it was found that, during downward rotation of the glenoid fossa, the greatest percentage of movement takes place at the acromioclavicular joint.

Mollier reported range of movement for both shoulder girdle joints for the frontal plane axis for the combined movements of upward and downward rotation of the glenoid fossa, but the amount of rotation about the longitudinal axis of the clavicle was not determined in this study.

SUMMARY

Two instruments were developed for use in determining range and direction of coronal and horizontal plane movements at the sternoclavicular and acromioclavicular joints. Measurements were obtained on sixty subjects (thirty female, thirty male) at rest and at the completion of the movements of elevation, depression, protraction, retraction, upward rotation of the glenoid fossa, and downward rotation of the glenoid fossa. Many individual variations were observed. Averages suggest the following:

1. The clavicle, at the sternoclavicular joint, has a posterior as well as a superior movement during elevation. The superior movement is greater in amount than the posterior movement. At the acromioclavicular joint the scapula (root of spine, specifically) moves anteriorly as well as inferiorly. The amount of movement is nearly equal in the two planes.

2. The clavicle, at the sternoclavicular joint, has an anterior as well as an inferior movement during depression. The inferior movement is greater in amount than the anterior movement. At the acromioclavicular joint, the scapula (root of spine, specifically) moves anteriorly as well as superiorly. The amount of movement is nearly equal in the two planes.

3. The clavicle, at the sternoclavicular joint, moves anteriorly during protraction, but it was unpredictable whether a superior or inferior movement accompanies this movement. The anterior movement is greater in amount than that of the coronal plane movement. At the acromioclavicular joint, the scapula (root of spine, specifically) moves anteriorly as well as superiorly. The anterior movement is greater in amount than the superior movement.

4. The clavicle, at the sternoclavicular joint, has a superior as well as a posterior movement during retraction. The posterior movement is greater in amount than the superior movement. At the acromioclavicular joint, the scapula (root of spine, specifically) moves posteriorly for over half the female subjects; moves anteriorly for over half the male subjects, as well as inferiorly for both groups. The inferior movement is slightly greater in amount than the horizontal plane movement.

5. The clavicle, at the sternoclavicular joint, has a posterior as well as superior movement during upward rotation of the glenoid fossa. The posterior movement is greater in amount than the superior movement. At the acromioclavicular joint the scapula (root of spine, specifically) moves anteriorly as well as inferiorly. The inferior movement is greater in amount than the anterior movement.

6. During downward rotation of the glenoid fossa the movements of the clavicle, at the sternoclavicular joint, are unpredictable in the horizontal plane but are directed superiorly in the coronal plane. The superior movement is greater in amount than the horizontal plane movement. At the acromioclavicular joint, the scapula (root of spine, specifically) moves anteriorly as well as superiorly. The superior movement is greater in amount that the anterior movement.

The male subjects equaled or exceeded the average range of motion of the female subjects in both planes in each side except in three movements; two in the left side, superior inferior

direction for depression and upward rotation glenoid fossa (2° and 3°, respectively), and one in the right side, 1° in the anterior posterior direction for protraction.

Repeated measurements showed least variation at the sternoclavicular joint in depression, retraction, upward rotation of the glenoid fossa, protraction, downward rotation of the glenoid fossa and elevation, respectively.

Repeated measurements showed least variation at the acromioclavicular joint in retraction, depression, protraction, upward rotation of the glenoid fossa, elevation and downward rotation of the glenoid fossa, respectively.

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Physical Therapy for Burn Injuries*

James W. Roodhouse, B.S.†

A recent United States National Health Survey shows that 3.7 percent of the total injuries encountered in the United States from July 1958 through June 1959 were burns. Of all activity-restricting injuries during the same period, 744,000 (2.6 percent) were burn injuries resulting in a loss of 737,000 work days.[1]

Because of the constant threat of nuclear warfare, burns have aroused great interest. From information released by the Department of Defense a surprise airburst of a single atomic bomb at about 2,000 feet over an urban area at noon in summer would be expected to produce 120,000 casualties with approximately 40,000 immediate deaths.[2]

CAUSES

The four major causes of burns are: (1) radiation, (2) thermal reaction, (3) chemicals, and (4) electricity.

Radiation. As stated by Pillsbury, Shelley, and Kligman,[3] the range of the electromagnetic spectrum and the variation of its effect upon the skin are great. The spectrum includes gamma rays, x-rays, ultraviolet light, visible light, infrared waves, and radio waves. With the possible exception of the radio waves, any of these radiations may be harmful to the skin if received in relatively large amounts. The danger of this type of exposure has been more fully recognized as the years have revealed the tragic sequelae of indiscriminate radium and x-ray radiation a generation ago. Control of reaction to ionizing radiation is successful only in prophylaxis; the changes produced in tissue are only partially reversible.

Thermal Lesions. These may result from either dry or wet heat or a brief exposure to radiant heat of very high intensity. The latter is usually referred to as a flash burn.

Chemical. Acids and alkalis cause the majority of chemical burns. After emergency treatment a chemical burn is treated the same as any other burn.

Electrical. The local injury produced by a high tension current has the usual features of

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† Administrative Assistant to the Medical Director, Institute of Physical Medicine and Rehabilitation, Peoria, Illinois.

a thermal burn with several additional characteristics. The heat producing these burns is far more intense than that producing other types. The resulting lesion is usually a deep third degree burn. The principles of treatment of electric burns are essentially the same as those of other types.

TYPES

The severity of a burn injury depends on area and depth. It is, in most cases, very difficult to make an accurate evaluation of the depth of a burn at the initial examination.

Burns are commonly divided into three types.[3]

1. The first degree burn consists of mild epidermal damage with a reactive hyperemia. There is usually some edema and pain. A first degree burn usually heals in four or five days without complication. The only evidence of the burn is post-inflammatory scaling and possibly light pigmentation.

2. A second degree burn is characterized by bulla or vesicle formation in addition to erythema. Here the epidermis has been damaged or destroyed. In neither the first nor second degree burn is there any scar formation in the absence of complicating factors.

3. In the third degree burn, there is damage or complete destruction of the corium. The burn becomes ulcerated, and the late changes produce mild to severe scars. Large areas of third degree burn are always accompanied by constitutional signs of toxemia and shock. There can be a wide variety of later complications of third degree burns ranging from infection to duodenal ulcers.

The extent of burn is usually expressed as the percentage of the total body surface. For many years Berkow's table was used as a guide for estimating percentage of body surface burned. A modification of this table by Tenneson and Pulaski into the "rule of nines" has been employed by many. With this method, the body is divided into various segments, each representing 9 per cent or multiples thereof. The head and each arm are given 9 per cent; the anterior trunk, posterior trunk, and both lower extremities are given double 9 or 18 per cent; and the genitals are given 1 per cent. For children, the extent of burn for the head and trunk should be increased and for the extremities decreased.

Early Treatment. First and second degree burns or a small third degree burn is largely a matter of protection and not interfering with natural reparative processes. Third degree burns covering any area of consequence demand hospitalization and measures to combat shock. Burns of serious magnitude demand immediate life saving measures. These include the use of whole blood and plasma to maintain fluid balance and help prevent shock. Antibiotics may be indicated as prophylactic measures to insure the maintainance of a sterile field; however, the bacteria count is usually low on burned surfaces which are treated early. Burns by the very nature of the injury are usually self-sterilizing. Infection is usually a result of contamination after the injury. When aseptic technique is employed, one of the most common causes of wound contamination is from the respiratory tracts of attending personnel. For this reason, all personnel, as well as the patient, should be masked when attending an open burn lesion. Further life saving measures may include a tracheotomy if the facial area has been severely burned or if the respiratory tract has been involved. Morphine or codeine may be indicated for pain control. Other life saving measures may be indicated depending on the nature and extent of the injury.

After treatment of the patient's general condition, attention must be given local treatment of the burn. As reported by Artz and Saroff [4] there are two main technics for definitive local care: (1) exposure and (2) occlusive dressings. These two methods do not constitute two distinct schools of thought. Neither is ideal as both have certain advantages and disadvantages.[4] Open air treatment allows the skin to form its own sterile crust which serves as a natural bandage. This eschar is composed of necrotic skin destroyed by the burn, coagulated protein from the exudated plasma, and bacterial exudates which have developed. After initial cleansing, the patient is placed on clean sheets in a position that best exposes and immobolizes the injured areas. The drying of the exudate begins approximately twelve hours after exposure to the air. A hard, dry, adherent crust forms in forty-eight to seventy-two hours and serves as a protective dressing.

How much cleansing and debridement should be done initially is a subject of some debate. Some feel that cleansing and debridement with their implication of morphine and/or anesthesia tend to help induce shock. This school also feels debridement may lead to further contamination.

The occlusive dressing method involves immediate application of fine mesh gauze. A bland ointment is used to prevent adherence of the dressings, which are usually left on until the eighth to fourteenth day unless the systemic reaction raises the possibility of serious infection. It is felt by some that there is a direct relationship between the rate of healing and

the number of times dressings are removed. This is probably due to disturbance of the islands of viable epithelium.

Physical therapy plays only a small part during the early treatment of the patient with extensive burns. It is most important that a patient be placed in a functional position to aid in recovery of joint mobilization after prolonged immobilization. The physical therapist can definitely contribute to this preventative therapy.

When the patient has suffered burns in small areas, such as the dorsum of the hands, hydrotherapy may hasten the healing process if started after cleansing and debridement of the wound. This should be followed by joint mobilization to prevent contracture. Physical therapy treatment for burns, as in any other condition, is more effective in prevention than correction. For these procedures, both the physical therapist and patient should be masked and technic kept as sterile as possible. To this end, hexachlorophene soap may be added to the water. Some advocate the use of an isotonic or hypertonic saline solution instead of the hexachlorophene soap additive. This method usually requires the application of a topical ointment to the exposed area immediately after removal from the water. A topical anesthesia and/or a topical antibiotic ointment may be used. This aids in the control of pain and infection.

Physical therapy can play an important part in the pre-grafting stage of recovery. As reported by Schuman,[5] it is important that areas be grafted at the earliest possible date. Under normal conditions, the eschar loosens about the second or third week, and underneath the eschar the granulation base appears. The earlier this granulation base appears, the earlier a graft can be applied. There are four possible courses to take in debridement of the eschar: to wait for normal separation, to institute surgical debridement, to apply saline soaks, or to remove the eschar by hydrotherapy. The disadvantage of the first method is the length of time necessary for separation of the eschar. The extended time is detrimental to the optimum grafting time. Surgical excision of the eschar may result in hemorrhage. There is also the danger of untoward reaction to anesthesia during surgical debridement. To be effective, wet saline soaks must be applied every four hours, which is time consuming to nursing care.

The hydrotherapy method is one of the oldest methods, and it was introduced by VanHebra in 1860. If occlusive dressings have been used, they are allowed to remain on the patient and soak off in the Hubbard tank. Again, hexachlorophene soap may be added, or enough salt to make the water isotonic or hypertonic. During this time, the agitating action of the air jets is used. After removal of the old dressings the wounds are redressed with sterile dressings. This is repeated until development of the granulation bed necessary for grafting. As a rule the eschar debrides as much as seven to ten days faster by this method, which is gentle and painless. If this procedure is performed carefully, there will be no associated hemorrhage. It also allows gentle range of motion of joints for contracture prevention and active underwater exercise to prevent atrophy. The only disadvantage is exposure of a sterile wound to water that is not sterile, even when hexachlorophene soap is added.

Physical therapy can play a significant role in the rehabilitation of the burn patient after grafting. This may begin after a good "take" of the grafts has been accomplished. General opinion holds it unlikely that tissue synthesis involved in the healing process can be hastened regardless of treatment or medication. However, hydrotherapy has much to offer in removing the exudate and maintaining a more viable granulation bed to facilitate the healing process.

In some instances in which healing is slow after grafting, the cause is the presence of bacteria on the skin surface. Ultraviolet, in many instances, is an effective form of treatment. The action spectra for killing unicellular organisms (bacteria, yeast, and protozoa) are in the wave length limits between 2,500 to 2,800 Å. The author has found one minimal erythema dose of radiation daily to be adequate.

The grafting process itself may cause contractures. The prevention of contractures and deformities depends upon the avoidance of extensive scar formation. The longer healing is delayed, the thicker the scar becomes and the greater the menace of a poor result. Once developed, most contractures and deformities require surgical correction to restore complete function. As reported by Bowers and Casberg,[6] the per cent of "take" when split-thickness grafts are used is higher than it is when full thickness grafts are employed; however, thicker skin produces better functional and cosmetic grafts. Split thickness grafts consist of all of the epithelium and upper layers of the corium. Due to the elastic fibers and the thickness of the skin, split-thickness grafts will contract during the healing process. Marked contraction of the organized fibrous bed under grafts will cause contractures. Thick grafts are used on areas that will undergo

constant trauma or on those where good cosmesis is desired. "Postage stamp" grafts permit larger surface areas to be grafted with a smaller amount of skin when donor sites are limited.[6] Artz and McMillan[7] state that certain areas of function should be grafted earlier than other areas. High priority should be given achievement of early skin coverage of the face and hands first, areas about joints and flexion creases second, and finally flat surfaces of the trunk and extremities. In no other area is it so important to obtain skin coverage in order to achieve a good functional result than in burns of the hand. Hands should be kept in a good functional position and motion should be encouraged as early as possible.

Regardless of the type of graft used, as soon as the healing process permits, massage with cocoa butter or lanolin and gentle range of motion should be employed. When hydrotherapy is used during this stage, an anti-pruritic oil, Alpha-Keri, has been added to the water in controlled cases with seemingly excellent results to date.

Dependent upon the extent and location of the burn injury, full rehabilitation may require many added services of the physical therapist. These may include joint mobilization, general muscle strengthening, or employment of assistive devices in the prevention or correction of contractures and gait training. The physical therapist has much to offer in the rehabilitation program of the burned patient. If his services are properly and efficiently utilized it is possible to reduce the hospital stay and minimize the activity-restricted days.

SUMMARY

The physical therapist has much to offer in the rehabilitation program of the burned patient. A judicious use of physical technique will help to reduce the hospital stay and period of inactivity of the burned patient. Physical therapy for burns is more effective in prevention than correction. Hydrotherapy may hasten the healing process if started after cleansing and debridement of the wound. After skin grafting of the burned patient, hydrotherapy has advantages in removing the exudate and maintaining a more viable granulation bed to facilitate the healing process. Ultraviolet, in many instances, is an effective form of treatment when healing is slow after grafting due to the presence of bacteria on the skin surface. The grafting process itself may cause contractures. The percentage of "take" when split-thickness grafts are used is higher than it is when full-thickness grafts are employed. In no other area is it so important to obtain skin coverage than in burns of the hand. Burned hands should be kept in a good functional position and motion should be encouraged as early as possible.

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Proprioceptive Neuromuscular Facilitation Film

A 35 minute color film with sound is available to chapters and schools of physical therapy at a rental fee of $10.00. One copy of the film has been given to the Association by the California Rehabilitation Center. Requests from states east of the Mississippi should be directed to the American Physical Therapy Association, 1790 Broadway, New York 19, New York; rental is payable to the American Physical Therapy Association. Those west of the Mississippi should write to California Rehabilitation Center, 2600 Alameda, Vallejo, California; rental is payable to the California Rehabilitation Center. All requests should be submitted four weeks in advance of date of showing. Alternate dates are desirable since both copies may have prior bookings.

Contemporary Management of Arthritis*

Raymond Rabideau, B.S.†

With advances in the understanding of arthritis, the concept of "management" has evolved rather than "cure" or "treatment." Historically, the word "cure" was widely used in the 1920's and 1930's, "treatment" in the 1940's, and in the last few years the term "management" has been used. It is now generally agreed that very few patients are "cured" of arthritis. The term "treatment" implies a passive role on the part of the patient: whereas "management" requires his active cooperation and participation with the physician acting in an advisory or guiding role.[1] While it is true that little is known about the etiology and pathogenesis of arthritis and that a "cure" for this crippling disease remains elusive, it is nonetheless important that what is known about this illness should be effectively applied, and that the measures proved to be of therapeutic value be administered as soon after the onset as possible.

Rheumatoid arthritis and rheumatoid spondylitis are highest in incidence among the arthritides and exact the greatest toll in crippling. Degenerative arthritis ranks next in the order of frequency. This article will be chiefly concerned with the management of rheumatoid arthritis.

Strikingly significant, rheumatoid arthritis is a disease of low mortality, is high in frequency of occurrence, and produces marked incapacity. It is a disease with the virulence to disable and cripple progressively, but it is devoid of the mercy to kill. Rheumatism is so frequent and so disabling that it leads all other diseases in crippling and economic loss in the United States. Rheumatism accounts for a loss of more than ninety-two million work days per year and an annual economic loss of one quarter billion dollars. Each year nearly one hundred and fifty thousand persons are made invalid by the disease.[2]

There is unanimity of opinion that treatment of the patient with rheumatoid arthritis should be comprehensive, individualized, and in the beginning, conservative. Surely, these meaningful words, though overworked, will be repeated again and again.

What has truly been your attiture as a physical therapist when asked to treat a patient with rheumatoid arthritis? Have you ever mentally thrown up your hands and said to yourself, "I do not think that we can offer this patient enough." Let us visualize the therapist in a physical therapy department as he attempts to give an arthritic patient his first treatment. Our hypothetical patient presents one, some, or all of the following: characteristic "flipper" deformities or "opera glass" hands, multiple flexion contractures, wasted musculature, swollen and painful joints, emaciation, and a depressed, twisted countenance. These symptoms and findings are guaranteed to upset any physician and most physical therapists and will provide sufficient fuel for their flames of righteous indignation. The introductions are over now. The patient's attitude is one of indifference or doubt. His first remarks seem to indicate that he has given up. He seems to be counting his regrets. Listen to him now as he tells the therapist, "I don't think these treatments are going to help me. You see, I've had a lot of mud baths, mineral water baths, steam baths, and Swedish massage and, oh! yes, I've had immune milk. I've had *arthuritis* now for twenty years." The therapist has noticed that the patient has copper bands around his wrists and ankles. "Ever since I started wearing these, the pain has eased up," the patient states.

Doesn't it seem strange that in this year 1961 A.D. our patient has described treatments which have been given by representatives of superstition, voodoo, or black magic? Haven't we been taught that, here in the United States, the healing arts no longer are influenced by the devious predictions of the soothsayer, the mysterious incantations of the witch doctor, or the dubious ministrations of the barber surgeon; further, that speculation, superstition, and quackery have given way to exact knowledge about the causes, treatment, and prevention of many diseases?[3] Yet, in the management of arthritis, there tends to be much pseudo-scientific gadgetry. There are so many counterirritants, rubefacients, ointments, creams, lotions, and hundreds of different pills which frequently promise more relief for the arthritic than is possible. Although our therapist was able to contain herself, she had wanted to shout out, "We cannot bake, nor boil, nor soak, nor rub away your arthritis!"

How would you have responded had you been the therapist in the above example? Would your attitude indicate that you are tactful, poised, masterful, and possess a high degree of equanimity? If you have ever had the opportunity to watch physicians who "treat the whole patient,"

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† Technical Director, Iron Range Rehabilitation Center, Virginia, Minnesota.

you will have observed that they support the patient's morale, revive his hopes, guide his ambitions, and direct his activities. They seem to do this by intuition. The foundation must be their own experience, for apparently, they never learned it from books. To those who reveal such talents, it then becomes a fine art, and like other arts, it is learned only through practice. Physical therapists can learn much by observation. However, it is not sufficient to imitate what a successful therapist does. As a matter of fact, he never does the same thing twice. To be truly effective, action must be based on understanding. The variety in what the master does arises from his appreciation of the uniqueness of each patient's situation, and he tailors his management to fit the patient's needs. This is what the superficial observer fails to see and what the devoted disciple will find so hard to learn—the acquisition of the real understanding of the non-anatomic features of the case.

A conservative program of management for the arthritic patient includes bed rest in the early acute states, followed by a graduated program of activity; a sympathetic relationship between the physician and the patient; the patient's understanding the disease and the purpose of long-range therapy; improvement of general health by measures such as adequate diet; vitamins; transfusions; removal of infected foci; and the avoidance of steriods or phenylbutazone at the onset of therapy. These measures, with the additional use of salicylates, the regular use of suitable forms of local heat, daily practice of controlled and supervised exercises, postural instruction, and appropriate measures to prevent deformities, including splints, constitutes what has been termed the "basic program of treatment."[4]

It is exceedingly important to relieve the arthritic patient of worries about economic instability, the dread of crippling deformity, and social or family deprivations. An important part of successful management is to obtain the cooperation of the patient to the fullest possible extent. The patient should receive an early, detailed explanation of the nature and course of the disease by the physician. It is essential to discuss the necessity for a broad attack over a long period of time with emphasis on the fact that no miracles need be expected. The patient should be told that, although there is no "sure cure," much can be done to control the disease. Surely, the patient's confidence can be strengthened by an attitude of sensible, aggressive, open-minded, honest optimism on the part of the physician and the therapist.

While it is generally agreed that complete bed rest is necessary for the early, severe rheumatoid arthritic patient, it is of paramount importance to maintain good bed posture and body alignment. Most beds are too soft. A sheet of 1-inch thick plywood, running the entire length and width of the bed and placed between the spring and mattress, will give the body proper support. An effective footboard, cock-up splints or wrist rolls, trochanter rolls, sandbags, the judicious use of pillows, muscle setting exercises, and passive range of motion will be of marked value in preventing contractures, muscle wasting, and loss of joint mobility. In home management, many patients will find it easier to get into and out of bed if the bed is raised on blocks (6 inches by 6 inches) placed under the legs of the bed.

Although rest in bed may be called for during the most painful stages of rheumatoid arthritis, many physicians will start bed exercises as soon as the patient is seen, regardless of the signs of inflammation.[5] Surely, the use of exercises is advisable, even in the acute phase of the disease, but the physical therapist should remember that pain, fatigue, and the severity of inflammation must be used as the guiding features in the exercise program.

In spite of the new discoveries and tremendous advances in the treatment of arthritis, the most important phase of the management of the disease is the prevention or minimizing of deformity and the maintenance or improvement of function. The vast number of remedies that are promoted for use in arthritis tend to detract, in one sense, from the full appreciation of the value of physical treatment in the prevention of the crippling and disabling effects which are produced by this dreaded disease.

All too frequently, in the clinics, arthritis patients are seen who have had long courses of steroid therapy or other medical management without ever having been adequately instructed in a consistent and logical home physical treatment regimen. It seems particularly strange that the latter is often thought to be a "last resort" method. More physicians and physical therapists ought to think of the importance of an early, comprehensive approach in the treatment of rheumatoid arthritis, for any unnecessary delay most certainly can affect the results. One gathers the impression that failures in the successful management of arthritis are not so much due to the type of procedure used, as to the inadequate examination or early recognition of the disease before treatment is ever started.

The intelligent use of physical measures and agents requires that the physician and therapist have a good knowledge of the physiological effects. In the management of arthritis, heat, in any form, is used for its analgesic, muscle relaxing, and vasodilating effects. Message, when properly applied, can increase the venous blood and lymph flow, but it is used chiefly for its sedative and muscle relaxing effects. Therapeutic exercises employed in arthritis are designed to increase the joint range of motion and to increase the strength and endurance. Exercise is thought to be the most important part of the physical therapy program. Every patient with rheumatoid arthritis should be placed on a schedule of activity which provides a balance between rest and exercise. Extra rest prevents and reduces general fatigue and benefits affected joints.

Not one patient in, perhaps, one hundred is following a proper schedule to protect his joints and to maintain function. This is a serious charge against the medical care programs for patients who have rheumatoid arthritis. Now, whether you agree with these figures or not, you must certainly agree that a high percentage of all patients with arthritis fail to carry out any program, do so half-heartedly, or eventually tend to lose interest in even a carefully planned and effective schedule of treatment. Invariably the personal discomfort, the expense, the slow or poor results or the lack of confidence in those who are attempting to treat them will be the reasons for poor co-operation.

The physician has the most important role in motivating the patient to carry out a satisfactory treatment program. He must help the patient to gain insight into what can be accomplished by physical therapy. Further, the physician should make the patient realize that it requires an investment of time and effort on his part, and any benefits will be the result of his own hard work. Regular re-evaluation by the physician and physical therapist is a highly desirable feature of the home treatment program. Frequent visits on an outpatient basis are necessary, and instruction in modified techniques or new techniques should be given when indicated. Adequate follow-up care may, in some cases, mean the difference between success and failure of the treatment. Moreover, it may provide the key to the difficult problem of motivation in the patient's long and arduous program of home care.

As might be expected, many of us become depressed when patients fail to respond promptly. In the management of the arthritic, there is not sufficient excitement and satisfaction to balance the ever-present complexities, frustrations, and failures. Often there is only a minimal improvement and occassionally the only satisfaction for the therapist may be the fact of having made a conscientious effort.

This is not true with the physical therapist in our hypothetical situation. He has made every effort to improve his knowledge by listening, observing, reading, and trying. Our therapist has remembered that the arthritic patient has come to the department with many physical and emotional handicaps. He has known many hours of personal suffering. Through trial and error, the patient has found some suitable "dodges" which he can use for his own comfort. The arthritic sought aid from many different channels and in many cases has been victimized. Note that the thearapist has not been overly critical about the type of treatments which the patient has had previously. The therapist has attempted to meet the needs of those less fortunate.

Almost too frequently, the arthritic, who is chronically sick or disabled, seems to be treated differently from the person who will recover quickly from an acute illness. In ancient civilization human illness was regarded in terms of socially deviant behavior. The sick and disabled could expect consideration from society only so long as their conditions were not chronic.[6] Some of these attitudes seem to persist even today.

As early as the 1920's, medical investigators thought that emotional trauma or the mental state was associated with the onset of rheumatoid arthritis, and that the psycho-physio-chemical reaction of the arthritic patient might be due to years of emotional conflict. Within recent years, there has been an increase in the number of studies concerned with the personality characteristics of arthritics, including emotional conflicts and psychological defenses, and with environmental stress factors which are other than of a physical or biologic nature. Although thorough studies of this kind are still too few in number, certain traits have been noted by various investigators as occurring frequently in people with rheumatoid arthritis. These people are described as leading quiet lives, being "homebirds," complaining of shyness and social inadequacy, and having marked feelings of inferiority. Although there is some question about this, there is a tendency toward depression. From the arthritic patient's emotional limitations, it should not be surprising that they seem to have difficulty in forming close relationships with other people. It has been further noted that these patients are inclined to be hyperactive and tend to overwork, to take jobs requiring hard work rather than initiative or responsibility. Emotional

reactions to disturbing environmental events have been considered by a number of writers to bear some relationship to the onset or exacerbation of rheumatoid arthritis. Some of these reactions might be distress over financial matters, anxiety about family worry, and grief over the loss or separation of a parent or close relative.[7] The patient's emotional reactions can probably be summed up by saying that he is overwhelmed by his struggle for survival and his difficulties in meeting his economic needs. If every arthritic patient had adequate financial resources, then his problems would be greatly diminished. What is society's responsibility in this matter? Perhaps these personality factors do not always exist, but when they do, the patient's confidence will be strengthened through the physician's sympathetic understanding.

The extent to which industry can contribute to knowledge of arthritis and other chronic diseases is a matter of considerable interest to health workers, generally, and to the population at large, as well as to management and labor. Rheumatic diseases pose a major industrial morbidity problem. Many of those affected by arthritis continue to work, but the more disabled require change of employment and must modify or stop their work because of the severity of the disease. Although the relationship between certain working conditions and the incidence of certain rheumatic diseases has not necessarily proved causal, further investigation is necessary. Knowledge of the dimensions of the chronic disease problem and of the factors contributing to the occurrence of chronic diseases is of great practical importance. Morbidity data is of value to labor and management alike, especially with an increasing trend toward fringe benefits in contracts with unions. It would appear particularly necessary in helping to determine whether or not a disease is occupational in origin. It is important in assessing the effect of certain chronic diseases upon the turnover rate of skilled labor.[8] More and more of the larger industries are now realizing that good health is good business. Improved health standards in this nation have meant better workers, increased production, and more markets.

Today, in industry, the physician can find many opportunities to assist in improving and maintaining the health of the worker through the use of industrial preventive medical techniques. Through the use of pre-placement examination, many industries determine the physical capacities of the individual so that he may be placed in work that is commensurate with his abilities and that will not exceed his physical limitations. First aid and follow-up care for injuries and illnesses arising out of and in the course of employment are a logical part of the in-plant medical program. Periodic examinations constitute a significant case-finding program with referral to the family physician for definitive treatment. Health counseling and health education are available, when needed, for any matters relating to physical, mental, or emotional health of a worker.[9] Industrial management is becoming increasingly aware of the value of a health service in industry. However, additional efforts should be made in the areas of physical restoration and rehabilitation. Automation and job design have brought about drastic changes in the energy output of thousands of industrial employees to such an extent that exercise breaks have been suggested as a means of maintaining physical fitness. A gymnastic pause[10] might prove very valuable to the arthritic worker who has a notorious tendency to "gel" after prolonged immobility. One gathers the impression that most of these patients adjust best to a type of employment which does not demand heavy lifting, undue exposure or fatigue, prolonged sitting (including driving), or standing.

SUMMARY

No clear, concise, well-defined methods of management of the arthritic have been introduced, for modern treatment of rheumatoid arthritis consists of a comprehensive, individualized program. An appeal has been made for greater understanding and a more wholesome attitude on the part of the physicians and therapists as they attempt to meet the needs of the arthritic. Dedicated determination and acceptance of responsibilities with humility are necessary. The management of arthritis seems to hold greater promise today than ever before.

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Case Reports

Posterior Dislocation and Fracture of the Hip in an Aged Patient

Jacqueline King, B.S.*

The rehabilitation program of this patient is of interest for three reasons. First, the age and the medical history of the patient required extreme caution in preventing fatigue. Second, good team work among physicians, physical therapists, and nurses, with frequent evaluation, resulted in rapid, maximum recovery with little pain. Finally, the patient's attitude was unusually helpful for a man of his age. He was not a man to sit and do nothing; indeed he was eager to return to his office even before his doctor's permission was granted.

A seventy-one year old business executive was admitted to the hospital on April 16, 1960, complaining of pain in his left knee and hip. About one and a half hours prior to admission, the patient was in the back seat of an automobile which was being backed out of his driveway. The accelerator stuck; the auto raced backwards down the driveway and across the street and struck a tree. At impact, the front seat was torn out of the floor and thrust backwards. It struck him on both knees, with greater force against the left knee. He had immediate, severe pain in the left knee with associated pain in the left thigh and hip.

X-rays of the left hip revealed a posterior dislocation, a fracture of the head of the femur, and an associated fracture of the posterior ring of the acetabulum. X-rays of the left knee revealed no fracture, but the articular cartilage, menisci, and joint capsule were severely contused. There was a small abrasion of the right knee, but no swelling or effusion. His blood pressure was 190/90 mm. Hg.

The patient's history revealed that he had had two "heart attacks" three years before. He was taking two tablets of Raudixin daily, Dicumarol twice a week, and was on a low-fat, low-cholesterol diet. He also had a history of peptic ulcer and recurrent hematuria following a transurethral prostate resection in 1950.

He was taken to surgery immediately. Under general anesthesia the head of the femur was satisfactorily reduced, and appeared stable. He was placed in Buck's extension traction with six pounds of weight and was returned to his bed. Two days later in bed, in traction, his hip spontaneously redislocated, apparently while he was turning over or being propped up for a meal. He was returned to surgery, and the hip was again easily reduced under general anesthesia. A plaster of paris body cast was applied from the nipple line to the knee on the right, and to the ankle on the left. The left hip was set in a position of external rotation, abduction, and slight extension. He remained in this cast for twenty-five days. During this time he complained of gastric discomfort, and his stools gave evidence of bleeding of the peptic ulcer. He was given two blood transfusions and was placed on a special diet. By the time the body cast was removed, the bleeding of the ulcer was no longer present.

Physical therapy was begun in the patient's room one month following initial injury and eight days after the body cast was removed. Initial treatment consisted of quadriceps "setting," gentle active-assistive hip and knee flexion (to a 45° limit), static contraction of hip abductors and adductors against light manual resistance, and ankle circling for the left leg muscles. Due to the possibility of redislocation, active hip abduction was not permitted during the first two weeks of treatment. An overhead knee exerciser was rigged on the patient's bed for active-assistive exercises to the left quadriceps, and active knee extension exercises over the edge of the bed were begun for the right knee. After one week, he was started on weight-resistance exercises in the supine position, beginning with

* Assistant Chief Physical Therapist, Campbell Clinic, Memphis, Tennessee.

two pounds, twenty times twice a day to knee extension bilaterally.

Two weeks later the patient was brought to the physical therapy department twice a day in a wheel chair for standing between parallel bars. He was not allowed to bear weight on his left leg. Two days later his blood pressure rose to 180/90 mm. Hg, so physical therapy was discontinued for twenty-four hours until he was seen by his consulting physician. The program was then resumed in full with addition of active-assistive hip extension and active knee flexion exercises. The weight-resistance exercises were now performed with the patient sitting up, starting with three pounds twenty-five times twice a day to knee extension bilaterally.

Within the next two weeks he started walking between the parallel bars, but still was not allowed to bear weight on the left leg. At this time he had 80° active flexion, 15° abduction, and 5 to 10° extension of his left hip; and almost full range of motion of his left knee. Except for mild discomfort upon extreme abduction and internal rotation of his hip, his only complaint was of "aching" in his left knee, particularly at night. The aching was relieved by hot packs applied for thirty minutes.

Exactly three months following his accident the patient was started on thirty to fifty per cent weight bearing on his left leg between the parallel bars. He was fitted with axillary crutches the following day, and instructed in a three-point crutch gait, which he mastered with ease. A one-quarter inch lift was put on the heel of his left shoe. Also at this time, he was started on the stationary bicycle for five to ten minutes twice a day. He was soon instructed in stair climbing with his crutches, and his gait training was intensified, with emphasis on correction of his tendency to walk with his left leg in external rotation and slight adduction.

After ten days, the patient was taken home for two or three hours in order to teach him how to get in and out of his auto, and to check his home situation in regard to any problems which might arise following his discharge from the hospital. An electric chair elevator had been installed in the patient's home following his heart attacks. A kitchen stool with rubber tips was recommended for use in his shower. A small, sturdy table on which he could do his weight-resistance exercises, was also ordered.

The patient was discharged from the hospital three and a half months following his accident. His aftercare program required that he have a nurse at home during the day, and that the physical therapist visit his home once a week to instruct his nurse in the exercise program and to check on his activities. He continued with the same exercise program; namely, active flexion, extension, abduction, adduction, and internal rotation of the left hip; and weight-resistance exercises for bilateral knee extension. He was now lifting eight pounds, twenty to twenty-five times twice a day.

Within two weeks following his discharge he was going to his office for one or two hours a day. His range of motion was normal in all respects, except in active hip flexion, which remained at approximately 95°. His chief complaint continued to be "aching" in his left knee. It was less severe than during hospitalization.

How to Borrow a Print of *The Return*

A complete listing of the film libraries where the Association's latest film is on deposit may be found on page 99 of the February, 1959, issue of the *Physical Therapy Review*. If the library nearest you cannot supply you on the date desired, contact another library near you. If you cannot obtain a copy, an order may be sent directly to the Motion Picture Service Bureau, 1697 Broadway, Suite 1406, New York 19, New York. The service fee is $2.75 and includes postage and insurance one way. The borrower is requested to pay return costs. The Bureau bills, and receives payment from the borrower. In addition to the 38-minute version, there is a TV version running 28 minutes, available from the Bureau at the same fee. There is also a 58-second television spot with sound track, excerpted from *The Return*, available on loan for a service fee of $1.00. *The Return* was chosen by Howard Thompson of *The New York Times* as one of the 10 best nontheatrical films of 1958.

Suggestions from the Field

Two New Devices for Severely Disabled Poliomyelitis Patients*

Anna J. Janett, M.A.†

The *ambulation support* for gluteus medius weakness for patients with upper extremity involvement consists of a hinged waist band, padded inside with sponge rubber to prevent slipping, with buckles in front and to which duraluminum tubing is attached at the sides. The tubing extends horizontally at each side for a distance of 6 inches, then bends downward at a right angle to about 12 inches above the floor. The lower adjustable portion of a Lofstrand crutch with swivel crutch tips complete these lateral stabilizing bars. (Fig. 1, *left.*) To allow for precise adjustment, additional holes were made in the inner shaft, to accommodate the spring clips so that the total length could be varied by as little as one-quarter inch.

The appliance was used for a little girl with severe involvement of the neck, trunk and upper extremities, as well as in the gluteus medius bilaterally. She used a molded body jacket of laminated plastic and a left long-leg brace. Removable gutter supports for the arms were attached to the jacket (Fig. 1, *center*), as well as an attachment plate for the neck brace described below.

This patient was seven years old, and two and a half years post onset of poliomyelitis. She learned to walk using a four-point gait, the lateral bars of the support being advanced by tilting and rotating her body. They thus gave support in the same way that crutches or canes would.

The *functional neck brace* has been used for several patients with weakness of the long flexors and extensors of the neck. It gives adequate support, yet permits utilization of the available neck power by allowing rotation and controlled amounts of flexion and extension. The brace consists of three main parts: (1) the head support, (2) the swivel mechanism, and (3) the trunk attachment.

1. *The head support.* The occipital and manibular support are molded and padded, and attached to each other by means of lateral bars. The occipital piece is fixed; the manibular piece is removable and is adjusted to the desired position by rectangular rings with set screws. The lateral bars on the occipital portion over which the mandibular support fits have holes drilled through them to allow firm placement of the manibular piece. (Fig. 1, *right.*)

The head support is hinged to the ends of a horse-shoe shaped duraluminum bar so that it can pivot forward and backward on a horizontal axis. The pivot is limited by set screws in the ends of the horse-shoe shaped bar. When applied to the patient this bar extends from about 2 inches behind the cervical spinous processes to about 1 inch below the angle of the mandible bilaterally, so that the axis for the saggital neck motions is located approximately 1 inch below the temporo-mandibular joint.

2. *The swivel mechanism.* The horseshoe-shaped bar is attached by a single pivot located in its center to the bracket which connects it to the trunk attachment. This bracket is a vertical metal piece with a tubular opening at the top. The entire head support can thus rotate on a vertical axis, and permit rotation of the neck. The axis of rotation is located two inches behind the spinous processes.

Though both axes, the one in the vertical plane and the one in the horizontal plane, are at a distance from their respective anatomical axes, causing a somewhat eccentric movement this has not been disturbing in view of the short range of movement and the general flexibility of the neck.

3. *The trunk attachment.* The trunk attachment is a rectangular plate with a series of holes

* This project was supported by a grant from The National Foundation.

† Physical Therapy Supervisor, Fairmont Hospital of Alameda County, San Leandro, California.

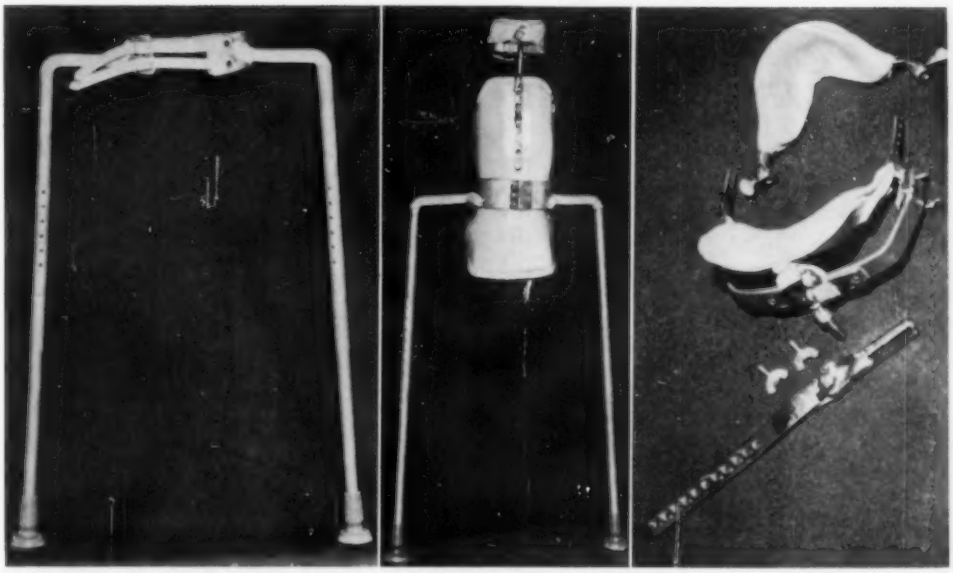

FIG. 1. *Left*, ambulation support; *center*, ambulation support showing body jacket and attachment plate for neck brace; *right*, the head support.

drilled into it and attached to 1-inch wide flat bars extending beyond the plate at each side. These bars may be incorporated into a plaster body jacket, leaving the plate itself exposed and flush with the jacket, or they may also be attached to a laminated plastic jacket by rivets. The upright bar for the swivel joint is attached to this plate with screws. Both the plate and the upright have a sufficient number of holes to adjust the height of the head support.

This neck brace can also be supported on a modified Taylor back brace. The pelvic band, instead of fitting around the pelvis, sits on top of the iliac crests. It is well padded for comfort, and buckles in front. The horizontal bars between the spinal uprights serve for the attachment of the swivel joint upright.

A corset alone does not give adequate stability for support of the neck brace, but the iliac crest support can be worn over a corset.

Small Tip

Our hospital is without a standing table. I have found the x-ray table an excellent substitute. JOHN HARPOLE

Editorials

A Pressing Obligation

The words "apathy" and "complacency" describe attitudes which are highly undesirable. Even shadings of such attitudes are outside the realm of acceptability, if one is to continue to be equal to the demands inherent in the acceptance of the responsibilities of his profession. Most of these demands arise because of a profession's reason for being and the body of knowledge particular to it.

Such a demand is that which requires members of a profession allied to medicine to determine and prepare for the role they can take in time of medical emergency. This is an individual as well as a collective problem. It is best solved when all concerned contribute to the solution. This demand is apt to be pushed off and off due to the pressures of day-to-day patient care. It is like a toothache; if one is busy enough, he forgets it. Fortunately for our peace of mind, we are busy enough or almost busy enough, to feel justified in our procrastination.

John C. Foundas and Walter J. Schmidt, M.D. have a timely article, "Emergency Care in a Physical Therapy Section" in this issue of the *Review*. They remind us of our obligation to be prepared to meet the medical emergencies that may confront us. No matter how conscious we are of necessary precautions and safety, accidents can and do occur. We must anticipate them. Mr. Foundas and Dr. Schmidt offer a guide to ease our preparation. With this assistance, excuses will be hard to find.

The official publication of a professional organization is a reflection of the attitudes and thinking of the membership of that organization. The publication of this article indicates that physical therapists are aware of their responsibilities in this area and want to be prepared to meet them.

There is another demand that faces physical therapists—the determination of their role in a mass casualty situation. Have you faced it and are you prepared to meet it? Disasters occur with amazing frequency; one could occur in your area. Is the utilization of your knowledge and skill integrated into the emergency plan of your hospital or institution? Have you contributed to the development of the plan? Is your thinking clarified to the point that you can speak surely to the question of where and how physical therapists can best be utilized?

As you review your readiness to meet medical emergencies, you may find that some aspects of your potential role in the mass casualty situation will be clarified for you. If you share your thinking with others, perhaps the solution to this problem will begin to emerge. It is a pressing obligation; why not meet it?

If such preparation seems a burden, we would do well to remember what William E. Wickenden wrote in "The Second Mile."

"Every calling has its mile of compulsion, its daily round of tasks and duties, its standard of honest craftsmanship, its code of man-to-man relations, which one must cover if he is to survive. Beyond that lies the mile of voluntary effort, where men strive for excellence, give unrequired service to the common good, and seek to invest their work with a wide and enduring significance. It is only in this second mile that a calling may attain to the dignity and the distinction of a profession."

RUTH A. ROBINSON
Colonel, AMSC
Chief, Army Medical Specialist Corps

Fourteenth Anniversary of the Corps

On April 16, 1961, the Army Medical Specialist Corps celebrated the fourteenth anniversary of the establishment of the Corps to include dietitians, occupational therapists and physical therapists. Extending congratulations, Lieutenant General Leonard D. Heaton, Surgeon General, Department of the Army wrote, "The contribution made by dietitians, physical therapists and occupational therapists long predates the establishment of the Army Medical Specialist Corps. The record of their achievement has always been characterized by progressive professional competency, devotion to duty and a true spirit of service."

Our Association upon our fortieth anniversary is particularly cognizant that physical therapists have served American soldiers for more than forty-three years. Mary McMillan, our Founding President, on February 23, 1918, was appointed the first physical therapist (Reconstruction Aide) in the Medical Department of the U. S. Army. Physical therapists have served ever since, and one of our Charter members, Emma E. Vogel, Colonel, U. S. Army (retired), was the first Chief of the Women's Medical Specialist Corps (1947-1951). In 1955 the Women's Medical Specialist Corps was designated the Army Medical Specialist Corps permitting men to be commissioned. Harriett S. Lee, Lieutenant Colonel, U. S. Army (retired), (President of the American Physical Therapy Association, 1954-1956) was Chief of the Corps at that time and thus became the first Chief of the Army Medical Specialist Corps, a post which she held until 1958. For eight of the fourteen years, physical therapists have been Chiefs of the Corps.

Presently Colonel Ruth A. Robinson, who is immediate past president of the American Occupational Therapy Association, serves as Chief of the Army Medical Specialist Corps. Colonel Robinson has contributed an editorial to this issue. We know that all readers join us in praise for her leadership of the Corps and in congratulations to all who serve in the Corps. The past, present and future of the Corps are closely linked with our own.

The Market Is Here and Will Be There

Exhibitors and *Review* advertisers occasionally have expressed a reasonable question of duobt when they say, "But, how can we be sure that physical therapists really influence the choice or are responsible for recommending that certain equipment be purchased for physical therapy departments?" We have always held that physical therapists play a major role in the selection of equipment and that physical therapists' recommendations are followed because they are the persons who actually work with the equipment. The person who uses equipment must have confidence in that equipment; the product which is known and understood inspires confidence.

To substantiate our arguments and to reinforce them, a survey form was sent to all active members of the Association in August 1960. More than 1,200 replies were received. Time and pressure of other work has permitted tabulation of 1,207 replies, a relatively good sample.

Of these 1,207 active members, 668 (55 per cent) identified themselves as supervisors. In answer to the question, "Are your recommendations followed in purchasing?" 645 (53 per cent) reported "always;" 361 (29 per cent) reported "occasionally;" 21 (about two per cent) never have recommendations followed; and 180 (about 15 per cent) failed to answer the question. Thus, it seems safe to assume that at least 80 per cent of these physical therapists influence decisions on the purchase of equipment. More than half

always find their recommendations followed and more than half are in supervisory positions.

The questionnaire contained eighteen other questions. Exhibitors, advertisers and members will be interested to know that *Review's* "What's New" pages ranked as the third most regularly read department of the *Review*. Only "Articles" and "Suggestions from the Field" receive more attention. Physical therapists are interested in new products and in new ideas.

This June issue, our Conference issue, presents an opportune time to restate our belief that physical therapists represent *the* market for physical therapy equipment. The manufacturer or supplier who exhibits at Annual Conference will meet this market represented by our members who attend. We anticipate that 1,000 of our active members will be there. For the more than 5,000 active members who may not come to Chicago, the *Review* will keep them informed of new products through advertising and What's New. The market is *here* and will be *there*—wherever physical therapists are!

Standardization

There has been a great deal of discussion about the standardization of Physiotherapy. It is indeed one of our greatest problems, but as yet no definite solution has been brought forth. As an association, we have made our standards very high and our first need at present is to stabilize these standards, to put them on some kind of a workable basis. We are asked on all sides by doctors and hospital authorities, "Just what are your standards?" In reply to this each one gives her own idea or generalizes more or less upon physiotherapy as a whole. Since the association is the only organized body of physiotherapists, it should be able to give out an official concrete statement of its aims and standards. This should be carefully thought out in all phases of physiotherapy and adopted by the association as a national organization. To have something definite and comprehensive to present is one of the first steps toward standardization.

When the need for recognized schools of physiotherapy has been met and these schools firmly established, a special physiotherapy license will no doubt be easily obtained. But how are we to bridge the gap until these things have been accomplished? First, a national committee might prepare a specific statement of just what constitutes each branch of physiotherapy. After this had been voted upon and adopted by the association the next and hardest step would be for each chapter to take it up with its local Board of Health and ask that a temporary license be granted. For this, examination questions could be made out by a committee made up of representatives of each branch of physiotherapy and a Board of Health member. These examinations could then be given in different parts of the country to candidates endorsed by the association just as college entrance examinations are given. If a definite action like this could be accomplished, practicing physiotherapists as well as the public might be protected while schools are being established.

Discussion of this suggestion, either for or against it, is most earnestly invited.—Editorial, *P. T. Review*, December 1924

Whatever had been written shall remain,
Nor be erased, nor written o'er again.
The unwritten only still belongs to thee.
Take heed and ponder well what that shall be.
—HENRY W. LONGFELLOW

Association News

Marriages

Nancy Boek, of Madison, Wis., now Mrs. Nancy B. Rhodes, Madison.
Roberta Brodsky, of Brooklyn, N. Y., now Mrs. Roberta Bernstein, Brooklyn.
Florence Carroll, of Seattle, Wash., to Edward F. Riley, Jr., Seattle.
Nancy R. Copp, of Bridgeville, Pa., to Harvey W. Graves, Jr., Pittsburgh, Pa.
Marcia Dobrin, of Cleveland, Ohio, now Mrs. Marcia D. Lewin, South Euclid, Ohio.
Nellie M. Dodd, of St. Louis, Mo., now Mrs. James H. Blackwell, St. Louis.
Nancy Evans, of Kansas City, Kansas to Robert Kertscher, Long Island, N. Y.
Hedwig Gebhard, of Chicago, Ill., now Mrs. Hedig G. Rudloff, Chicago.
Mary M. Gerber, of Zanesville, Ohio, to Robert J. Swope, Zanesville.
Patricia L. Gilmore, of Salem, Ore., to David S. Barrows, Salem.
Barbara W. Heath, of New York, N. Y., to Kendall K. Kane, New York.
Mary Mayes, of Brooklyn, N. Y., now Mrs. Mary Miller, Brooklyn.
Carol Lynn McDaniel, of Lima, Ohio, to Paul C. Holland, Lima.
Ansusan Presby, of Madison, Wis., now Mrs. Ansusan P. Inskeep, Madison.
J. Richardson, of Norman, Okla., now Mrs. Joan R. Long, Norman.
Virginia A. Rose, of Hanover, N. H., now Mrs. Virginia R. Berwick, West Labanon, N. H.
Joan L. Searle, of Waban, Mass., now Mrs. Joan L. Fishback, Waban.
Romayne Silbernagel, of Galveston, Texas, now Mrs. Romayne S. Cox, Galveston.
Ruth Suyama, of Los Angeles, Calif., now Mrs. Ruth S. Kataoka, San Francisco, Calif.
Mary J. Varney, of Milwaukee, Wis., now Mrs. Mary V. Campbell, Milwaukee.
June H. Wafers, of Redwood City, California, now Mrs. June H. Green, Redwood City.
Phala Womack, of Fort Worth, Texas, now Mrs. Phala W. Helm, Fort Worth.

New Student Members

Boston University

Mary L. Balfour
Susan C. Beckwith
Beatrice C. Behrens
Elaine D. Bryant
Elin L. Edlund
Shifra Goldman
Linda L. Hammett
Marcia F. Hood
Helen A. Hunter
Beverly A. Hyman
Patricia Jones
Sandra F. Lezberg
Wanda M. Lull
Brenda M. Marshall
Carole L. McNeil
Carol J. Meeker
Judith A. Milano
Jill Nunnelley
Gail Nutter
Roger D. Ouellette
Irene Oxman
Judy D. Pease
Judith E. Russell
Joyce A. Schillinger
David A. Sliter
Sylvia F. Smith
Barbara J. White

University of Minnesota

Glenn N. Scudder

University of Washington

Judith E. Adams
Bonnie J. Courtion
Dale R. Eldridge
Ingri S. Johnson
Ann S. Moore
Patricia K. Munroe
Eva L. Ann Olason
Barbara G. Perkins
Karen D. Romstad
Arlene M. Schmitz
Bonnie K. Weimer

Helen Arthur Smith, Grand Rapids, Michigan, died recently after a brief illness. Mrs. Smith was sixty-one. She taught physical education for four years prior to receiving her professional preparation at Harvard Medical School in 1926. After graduation she joined the staff of the Grand Rapids Stocking Orthopedic School and headed the physical therapy program of the city school system. In 1929, Mrs. Smith was transferred to that city's Eastern Orthopedic School where she served until her death. She became an APTA member in 1928 and was affiliated with the former Western Michigan Chapter. At her death, she was an active member of the Michigan Chapter, Western District.

Josephine F. Hibben Alvord, Windsor Locks, Connecticut died suddenly April 12, 1961 at the age of fifty-three. Mrs. Alvord graduated from the Sargent School for Physical Education in 1930 and the Rhode Island Hospital course in physical therapy in 1931. She studied at the Swedish Institute and Clinique, London, England in 1933 prior to taking the examinations of the Chartered Society of Massage and Medical Gymnastics (now the Chartered Society of Physiotherapy). Her professional experience included positions in Providence, Rhode Island and Hartford, Connecticut. Mrs. Alvord became an Association member in 1932. She was the author of "Treatment of Whiplash Injury," an article which appeared in the August 1958 issue of the *Review*. In 1944 she was instrumental in reactivating the Connecticut Chapter. She has served as president of both the Connecticut and Rhode Island Chapters. At the time of her death she was an active member of the Connecticut Chapter, Eastern District.

Chicago • July 2-7 • The Palmer House

PAST

PRESENT

FUTURE

40th ANNIVERSARY

Business Meetings and Program Schedule

June 28–July 1 — **Board of Directors Meetings**

Sunday, July 2

8:30 A.M.— 5:00 P.M. — **General Registration**

9:30 A.M.— 5:00 P.M. — Section on Education
Public Health Section
Self Employed Section

5:00 P.M.— 8:00 P.M. — Toddlin' Inn—Illinois Chapter Reception

Monday, July 3 — Professional Advancement Day

9:00 A.M.— 5:00 P.M. — **General Registration**

8:30 A.M.— 9:30 A.M. — **Delegates' Registration** (continued 5:00 P.M.—7:00 P.M.)

9:30 A.M.—10:15 A.M. — Professional Advancement—Board of Directors, Panel Presentation

10:30 A.M.—12:00 Noon — Group Meetings and Discussion—Standards of Practice, Continuing Education, Research, Legislation, State Registration

12:00 Noon— 2:00 P.M. — Luncheon in honor of Charter Members

Monday, July 3

2:30 P.M.— 5:00 P.M. — Opening Session—Greetings

FOUNDATIONS FOR GROWTH, Gertrude Beard, President, American Physical Therapy Association, 1926–1928

PATTERNS FOR PROGRESS, Lt. Col. Agnes P. Snyder, President, American Physical Therapy Association, 1958–1961

7:00 P.M.—10:00 P.M. — **Film Theater**

7:30 P.M.— 9:30 P.M. — Special Interest Meetings—Arthritis and Rheumatism Foundation, Schools for Physically Handicapped Children, Veterans Administration

Tuesday, July 4

9:00 A.M.—11:00 A.M. — *General Session*—AFTER HOSPITAL CARE . . . WHAT?

ESSENTIALS AND OBJECTIVES OF AFTERCARE PROGRAMS, David Littauer, M.D., Executive Director, The Jewish Hospital, St. Louis

THE PEDIATRIC PATIENT, Clara M. Arrington, Physical Therapy Consultant, Division of Health Services, Children's Bureau, Department of Health, Education, and Welfare, Washington, D. C.

THE AMBULATORY ADULT PATIENT, Eleanor J. Bader, Executive Director, Delaware Curative Workshop, Inc., Wilmington

THE GERIATRIC PATIENT, Mildred O. Elson, Co-ordinator, Homestead Study Project, Goldwater Memorial Hospital, New York

11:00 A.M.— 3:00 P.M. **Exhibits—Opening**

3:00 P.M.— 5:30 P.M. **House of Delegates**

Wednesday, July 5

9:00 A.M.—11:00 A.M. *Concurrent Sessions*

Session A—THE PEDIATRIC PATIENT

CAUSES OF BIRTH DEFECTS, David Yi-Yung Hsia, M.D., Professor of Pediatrics, Northwestern University Medical School, Chicago

NEW APPROACHES TO CEREBRAL PALSY, Dorothy Page, Director of Center Services, Cerebral Palsy Treatment Center, Albany Medical Center Albany, New York.

TREATMENT OF CHILD AMPUTEES, Mildred I. Lineberger, Physical Therapy and Orthopedic Nursing Consultant, Area Child Amputee Program, Michigan Crippled Children Commission, Grand Rapids

Session B—THE AMBULATORY ADULT PATIENT

COMMON INJURIES RESULTING FROM TRAFFIC ACCIDENTS, James M. Stack, M.D., Associate Professor of Orthopaedic Surgery, Northwestern University Medical School, Chicago

PHYSICAL THERAPY FOR ELBOW INJURIES

Capt. Elizabeth J. Hamilton, AMSC, Physical Therapy Clinic, Brooke General Hospital, Fort Sam Houston, Texas

M. Eileen McEown, Chief Physical Therapist, St. Joseph's Hospital, Minot, North Dakota

Jane S. Mathews, Co-ordinator, Cerebral Palsy Program, The Idaho Elks' Rehabilitation Center, Boise

Session C—THE GERIATRIC PATIENT

THE AGING PROCESS, George M. Cummins, Jr., M.D., Assistant Professor of Medicine, Northwestern University Medical School, Chicago

BEHAVIORAL ASPECTS OF AGING, Benjamin Blackman, M.D., Associate, Department of Neurology and Psychiatry, Northwestern University Medical School, Chicago

11:00 A.M.— 3:00 P.M. **Exhibits—Continuing**

3:00 P.M.— 5:00 P.M. **House of Delegates**

7:30 P.M.—10:00 P.M. Chapter Workshop

Thursday, July 6

9:00 A.M.—11:00 A.M. *Concurrent Sessions*

Session A—THE PEDIATRIC PATIENT

MEDICAL ASPECTS OF ASTHMA, Gilbert Lanoff, M.D., Instructor of Pediatrics, Northwestern University Medical School, Chicago

MEDICAL ASPECTS OF CYSTIC FIBROSIS, Sumati Nair, M.D., Research Fellow, Children's Memorial Hospital, Chicago

PHYSICAL THERAPY FOR ASTHMATIC CHILDREN, Betty Pearl, Assistant Supervisor of Physical Therapy, University of Colorado Medical Center, Denver

PHYSICAL THERAPY FOR CHILDREN WITH CYSTIC FIBROSIS, Elizabeth Zausmer, Associate Director of Physical Therapy, The Children's Medical Center, Boston

Session B—THE AMBULATORY ADULT PATIENT

WHIPLASH INJURIES AND FRACTURE-DISLOCATIONS OF THE CERVICAL VERTERBRAE, Carlo Scuderi, M.D., Associate Professor of Orthopedic Surgery, University of Illinois, Chicago

PHYSICAL THERAPY PROCEDURES

Edna Wolf, Supervisor of Physical Therapy, St. Vincent's Hospital, New York

Edward J. Rathjen, Physical Therapist, Rehabilitation Center of San Jose, San Jose, California

Eleanor Hansen, Director, Physical Therapy Department, Hospital of the Good Samaritan, Los Angeles

Session C—THE GERIATRIC PATIENT

PHYSICAL THERAPY PROCEDURES

HIP FRACTURES, Frances Patton, Chief Physical Therapist, County of Los Angeles General Hospital, Los Angeles

HEMIPLEGIC PATIENTS WITH APHASIA, Lt. Barbara Pause, AMSC, Madigan General Hospital, Tacoma, Washington

THE TREATMENT OF CIRCULATORY PROBLEMS, William Murray, Senior Physical Therapist, Long Island Jewish Hospital, New Hyde Park, New York

IMPLICATIONS OF OSTEOPOROSIS, Bernice E. Lyford, Supervisor of Physical Therapy, Rehabilitation Unit, Holy Ghost Hospital, Cambridge, Massachusetts

11:00 A.M.— 3:00 P.M. Exhibits—Closing Session

3:00 P.M.— 5:00 P.M. **House of Delegates**

6:00 P.M.— 7:00 P.M. Reception for Board of Directors

7:30 P.M. **Annual Banquet**

Friday, July 7

9:00 A.M.—12:00 Noon *Concurrent Sessions*

Session A—THE PEDIATRIC PATIENT

PHYSICAL THERAPY IN PUBLIC SCHOOLS

AS SEEN BY THE PHYSICIAN, Bernard J. Michela, M.D., Director, Rehabilitation Institute of Chicago, Chicago

AS SEEN BY THE PHYSICAL THERAPIST, Inez Peacock, Physical Therapist, Harvey H. Lowrey School, Dearborn, Michigan

BEHAVIORAL ASPECTS OF THE HANDICAPPED CHILD, A. L. Ruess, Ph.D., Assistant Professor of Psychology, University of Illinois, Chicago

Session B—THE AMBULATORY ADULT PATIENT

BEHAVIORAL CAUSES OF TRAFFIC ACCIDENTS, Mary F. Young, M.D., Veterans Administration Hospital, Downey, Illinois

PSYCHOLOGICAL REACTIONS TO INJURY, Harold Visotsky, M.D., Clinical Assistant Professor of Psychology, University of Illinois, Chicago

SOCIOECONOMIC IMPLICATIONS FOR AMBULATORY ADULT PATIENTS, Roy W. Brooks, Chief of Physical Restoration Service, Illinois Division of Vocational Rehabilitation, Springfield

Session C—THE GERIATRIC PATIENT

PHYSICAL THERAPY IN THE HOME

THE FAMILY HOME, Elma G. Spreckley, Staff Physical Therapist, Community Nursing Services of Philadelphia, Philadelphia

THE NURSING HOME, Robert E. Strzelczyk, Chief Physical Therapist, St. Nicholas Hospital, Sheboygan, Wisconsin

A HOMESTEAD FOR THE CHRONICALLY DISABLED, Mildred O. Elson, Co-ordinator, Homestead Study Project, Goldwater Memorial Hospital, New York

2:00 P.M.— 3:00 P.M. *General Session*

WHO BELONGS WHERE . . . AND THE COST OF CARE, Edna Nicholson, Executive Director, Institute of Medicine of Chicago, Chicago

3:30 P.M.— 5:00 P.M. *Concurrent Sessions*—Original Papers

Session A

TEMPERATURE DISTRIBUTIONS AS PRODUCED BY MICROWAVES IN SPECIMENS UNDER THERAPEUTIC CONDITIONS, George D. Brunner, Head, Division of Physical Therapy, Department of Physical Medicine and Rehabilitation, University of Washington, Seattle

STUDY OF COMPARATIVE INCREASE IN MUSCLE STRENGTH IN THE QUADRICEPS FEMORIS BY ISOMETRIC AND ISOTONIC EXERCISE AND EFFECTS ON THE CONTRALATERAL MUSCLE, Major Mary S. Lawrence, AMSC; Major Harriet R. Myer, AMSC; and Captain Nancy L. Matthew, AMSC; Valley Forge General Hospital, Phoenixville, Pennsylvania

MOROCCAN OIL PARALYSIS: A REPORT ON THE NEUROMUSCULAR CONDITION OF 460 PATIENTS, Ruth M. Latimer, Physical Therapist, American Red Cross, Meknes, Morocco

A METHOD OF MEASURING RESISTANCE TO PASSIVE MUSCLE STRETCH, John D. Riebel, Research Physical Therapist, Duke University Medical Center, Durham, North Carolina

Session B

UPPER EXTREMITY PROSTHETICS: NEW FABRICATION AND EVALUATION PROCEDURES, Bernard R. Strohm, Acting Assistant Professor, Department of Physical Medicine and Rehabilitation, University of California Medical Center, Los Angeles

REPETITIVE RESISTANCE EXERCISE: A METHOD OF INDIRECT MUSCLE TRAINING, Miriam J. Partridge, Research Supervisor, Physical Therapy Department, Texas Institute for Rehabilitation and Research, Texas Medical Center, Houston

THE CHALLENGE TO PHYSICAL THERAPY IN PRESENT DAY MEDICINE, Eleanor Flanagan, Associate in Physical Therapy, Department of Physical Therapy, Duke University Medical Center, Durham, North Carolina

A WAY TO IMPROVE THE QUALITY OF CLINICAL AFFILIATION PROGRAMS FOR PHYSICAL THERAPY STUDENTS, Thelma J. Petty, Supervisor of Physical Therapy Education, Rehabilitation Institute, Department of Physical Medicine, Wayne State University College of Medicine, Detroit, Michigan

Section on Education

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Sunday, July 2

9:30 A.M. — 12:00 Noon — Reports of Activities in Physical Therapy Education: The Graduate Study Committee, Mildred Wood, Chairman
Aims and Activities of the Council of Physical Therapy School Directors, Lucille Daniels, President of Council
Philosophy of Clinical Education (Speaker to be announced)
Patterns in Clinical Education
Nursing—Emily Cardew, Dean, School of Nursing, University of Illinois
Occupational Therapy—Beatrice Wade, Head, Occupational Therapy Department, University of Illinois
Speech Therapy—Harold Westlake, Head, Department of Communicative Disorders, School of Speech, Northwestern University

12:15 P.M. — Luncheon and business meeting

2:15 P.M. — The Selection of a Facility for Clinical Education, Barbara White, Chairman, Curriculum in Physical Therapy; Director, Physical Therapy, University of Florida
A Clinical Facility Participates in an Affiliate Program, Viola Newman, Chief, Physical Therapy, Veterans Administration Hospital, Hines, Illinois
A Look Backward and a Look Forward, Dorothy Fredrickson, Director, Physical Therapy Department, Vanderbilt University Hospital

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Sunday, July 2

9:00 A.M. — 5:00 P.M.

9:00 A.M. — Registration

9:30 A.M. — 12:00 Noon — Call to Order—Greetings
Physical Therapy Services—Equitable Contractual Basis for Institutions, Clinics and Groups—Stanley Hager, Clinic Manager, Everett Clinic, Everett, Washington

2:00 P.M. — Panel and round table discussions
Audience participation (questions pertinent to self employment)

3:00 P.M. — Business Meeting

Public Health Section

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Sunday, July 2

9:00 A.M. — 5:00 P.M.

9:00 A.M. — Registration

9:30 A.M. — Welcome—Purpose of Meeting

9:45 A.M. — Trends in Care for Chronically Ill. Implications for Physical Therapists in Public Health—Dean Roberts, M.D., Executive Director, National Society for Crippled Children and Adults

10:45 A.M. Official Grant Resources for Support of Activities for Care of Chronically Ill—Claire Ryder, M.D., Health of the Aged Section, Chronic Disease Program, Division Special Health Services, USPHS.

1:30 P.M. Physical Therapists' Role in Developing Community Awareness of Rehabilitation Potential of Chronically Ill—E. Jane Carlin, Assistant Director, Division of Physical Therapy, School of Allied Medical Professions, University of Pennsylvania; Catherine Bauer, Director of Public Relations, National Society for Crippled Children and Adults
Audience Participation

3:15 P.M. Business Meeting

Conference Facts

Hotel

The Palmer House is world famous and signifies the finest in food, service and accommodations. It is located in the heart of the Chicago Loop.

Single rooms	$ 8.00
Double bedded rooms for two	$14.50
Twin bedrooms for two	$14.50
Suites	$34.50 to 59.50

The Association has obtained the above reduced rates during the week of July 4 which will apply to all rooms. Each room is air conditioned and has combination tub and shower. For each additional person in a double or twin bedroom there is an extra charge of $5.00 per day.

Hotel Reservations

Reservations should be sent to The Palmer House not later than two weeks prior to the Conference. For your convience, 1961 annual dues notice includes reservation card. Persons planning to room together should send in *only* one reservation listing number of persons sharing accommodations.

Social Events

Sunday evening. You will have a wonderful time as guest of the Illinois Chapter, host for the Opening Reception. This is your opportunity to get together with friends and to make new acquaintances.

Monday noon. You will want to attend the luncheon in honor of our Charter Members who made possible the celebration of the Association's 40th Anniversary in 1961. Let's make this a happy occasion for everyone!

Thursday evening. You can't afford to miss the Annual Banquet, a gala affair preceded by a reception for the Board of Directors. All members and guests are welcome. The Illinois Chapter plans to entertain you with fun all the while Chicago style!

Register in advance and purchase both the luncheon and banquet tickets at the special price of $12.00. If purchased separately, prices are: Banquet $8.00; Luncheon $5.50.

Registration

	Regular Fee	*Daily Fee**
Active and inactive members	$ 8.00	$3.00
Student members	$ 2.00	——
Nonmember physical therapy students	$ 4.00	——
Nonmember graduates of approved schools	$20.00	$8.00
Members of physical therapy organizations affiliated with the World Confederation for Physical Therapy: Those who are fulfilling requirements for membership in the A.P.T.A., and those who are in the United States as exchange visitors or as visitors under guidance of the A.P.T.A.	$ 8.00	$3.00
Those who are not affiliated with the A.P.T.A.	$20.00	$8.00

* Daily registration accommodates those persons who are able to attend the Conference for only one or two days. Daily fees should not be paid in advance.

For the convenience of all, members who plan to attend for the week are requested to register in advance to avoid delay by necessary presentation of membership cards. Registration forms included in dues notice.

Allied professional persons are invited to attend by presentation of credentials and at a courtesy fee of $3.00.

Complimentary registration is cordially extended to physicians and administrators upon presentation of credentials.

Exhibits

Scientific exhibits: Exhibits are accepted and assigned by the American Physical Therapy Association.

Commercial exhibits: Applications for space should be directed to Gordon M. Marshall, Exhibits Manager, 30 West Washington Street, Chicago 2.

1961-62 Dues Payable Now

Annual dues were payable May 1. To avoid loss of membership privileges and to receive the *Physicial Therapy Review* without interruption, prompt payment is necessary. Your immediate response will be appreciated as a service to the Association.

Reserve Officers of the Army Can Earn Credit in Chicago

The Commanding General, United States Continental Army Command, has approved the awarding of retirement point credits for Army Reserve Officers who attend specified sessions of the American Physical Therapy Association Conference in Chicago, Illinois in July.

Provision will be made for Reservists to register at The Palmer House, fourth floor.

Military Symposium
of the
American Physical Therapy Association
The Palmer House
Chicago, Illinois

Military Chairman—Major Dorothy Peterson, AMSC

The following sessions, by virtue of their military educational value, are included in the meeting and are authorized as military training assemblies. Reserve Officers of the Army are therefore eligible to earn training and retirement point credits for attendance at the sessions indicated below, providing such attendance at any session is for a period of not less than two hours and registration at each session is accomplished with the individual designated by the Commanding General to accomplish such registration. Not more than one credit can be granted for any single calendar day.

PROGRAM SESSIONS

Tuesday, 4 July 1961 0900-1100

After Hospital Care—What?

Essentials and Objectives of Aftercare Programs

The Pediatric Patient

The Ambulatory Adult Patient

The Geriatric Patient

Wednesday, 5 July 1961 0900-1100

The Pediatric Patient

Causes of Birth Defects; New Approaches to Cerebral Palsy; Child Amputees

The Ambulatory Adult Patient—Common Injuries Resulting from Traffic Accidents; Physical Therapy for Elbow Injuries—Three Approaches to Treatment

The Geriatric Patient

The Aging Process; Behavioral Aspects of Aging

Thursday, 6 July 1961 0900-1100

The Pediatric Patient

Medical Aspects of Asthma and Cystic Fibrosis; Physical Therapy for Asthmatic Children; Physical Therapy for Children with Cystic Fibrosis

The Ambulatory Patient

Whiplash Injuries and Fracture-dislocations of the Cervical Vertebrae; Physical Therapy—Three Approaches to Treatment

The Geriatric Patient

Physical Therapy for Hip Fractures; Aphasia in Cerebral Vascular Accidents; Other Circulatory problems; Osteoporosis

Friday, 7 July 1961 0900-1100

The Pediatric Patient

Physical Therapy in Public Schools—As Seen by the Physician, and As Seen by the Physical Therapist

Behavior of the Handicapped Child

The Ambulatory Patient

Behavioral Causes of Traffic Accidents; Psychological Reactions to Injury; Socioeconomic Implications of Accidents

The Geriatric Patient—Physical Therapy in the Home; The Family Home; The Nursing Home; A Homestead Project

Alumni Meetings at Conference

Monday, July 3

Northwestern University Dinner—6:30 PM

University of Pennsylvania "Mixer"—5:00 P.M.-6:45 P.M.

University of Southern California "Mixer"—5:00 P.M.-7:00 P.M.

Tuesday, July 4

University of Buffalo Luncheon—Noon

Columbia University Luncheon—Noon

Duke University Luncheon—Noon

Thursday, July 6

New York University Luncheon—Noon

Washington University Luncheon—Noon

Chapter Workshop Plans

All APTA members are invited to join with chapter and district officers in a Chapter Workshop, Wednesday, July 5, from 8:00 P.M. until 10:00 P.M. Responsibility for planning and conducting the session on "National and Chapter Organizations as Reciprocal Units" has been assumed co-operatively by the Advisory Committee on Chapter Activities and Advisory Committee to the Department of Professional Services in an effort to answer questions from our chapters and districts. Participants will discuss the APTA, its organization and structure, co-ordination of local and national activities, and emerging trends and transitions.

Conference Exhibits

Scientific Exhibits

AMERICAN BOARD FOR CERTIFICATION IN ORTHOTICS AND PROSTHETICS, INC.
Washington, D. C.

"A Team Approach—Prosthetics and Orthotics in the U.S.A." The three outstanding characteristics typifying prosthetics and orthotics are: THE TEAM APPROACH, THE CONCERN WITH THE INDIVIDUAL PATIENT, and TOTAL REHABILITATION. The exhibit visualizes these three characteristics as they interact with each other to provide for successful rehabilitation of the disabled.

ARTHRITIS AND RHEUMATISM FOUNDATION
New York, New York

"Arthritis, Our Nation's Greatest Crippler" illustrates the effect of the crippling disease on the American family. The exhibit outlines the treatment and research programs of the Arthritis and Rheumatism Foundation demonstrating the agency's theme, "Care Today and a Cure Tomorrow." Educational literature available through the ARF is shown.

CHILDREN'S REHABILITATION INSTITUTE, INC. FOR CEREBRAL PALSY
Reistertown, Maryland

"Therapies at Children's Rehabilitation Institute." Selected photographs of Physical Therapy, Occupational Therapy, and Speech Programs. No attempt has been made to summarize an integration of services for total management of cerebral palsy. Descriptive material is presented for those familiar with basic technics and seeking additional ideas and concepts.

DUKE UNIVERSITY MEDICAL CENTER DEPARTMENT OF PHYSICAL THERAPY
Durham, North Carolina

Part I shows comparative results of Isometric and Isotonic Exercise in development of Muscle Strength in subjects over sixty years of age. Part II exhibits an electronic instrument for measuring resistance to passive muscle stretch in patients with Parkinson's Disease and other Extrapyramidal Disorders.

MUSCULAR DYSTROPHY ASSOCIATIONS OF AMERICA, INC.
New York, New York

"Muscular Dystrophy and the Patient Service Program." This exhibit graphically illustrates the services Muscular Dystrophy Associations of America provides to patients under its Patient Service Program. A description of the disease, muscular dystrophy, is also presented.

THE NATIONAL FOUNDATION
New York, New York

"Chemistry, Chromosomes, and Congenital Anomalies." The exhibit presents by means of models, diagrams and pictures the *suggested* relationship between deoxyribonucletic acid and chromosomes as inferred from bacterial genetics and the relationship between chromosome patterns and congenital malformations.

PENNSYLVANIA REHABILITATION CENTER
Johnstown, Pennsylvania

"The Road to Employment" outlines Pennsylvania's approach to Vocational Rehabilitation. A modern concept of a state-wide facility, embracing all phases of the program from physical restoration and medical treatment to vocational training and employment.

UNITED CEREBRAL PALSY ASSOCIATIONS, INC.
New York, New York

"The Role of the Family Doctor in Cerebral Palsy." Diagnosis, treatment and rehabilitation of the cerebral palsied patient, including work with parents, school authorities, dentists, physical, occupational, and speech therapists. The aim of all professionals concerned is providing maximum opportunity for the patient's full participation in family, vocational, and community life.

UNITED STATES AIR FORCE MEDICAL SERVICE
Washington, D. C.

"Behind the Scenes of Bioastronautical Research." The exhibit consists of photographs depicting the research activities of the Aeromedical field Laboratory at Holloman Air Force Base, New Mexico.

UNITED STATES ARMY MEDICAL SERVICE
Washington, D. C.

"The Aphasic Patient." Army physical therapists at Madigan General Hospital have been working with hemiplegic patients, assisting them with their speech problems. Assistance by therapists in this area is particularly valuable in the absence of a speech therapist or in support of a speech therapist when one is available.

UNITED STATES NAVY BUREAU OF MEDICINE AND SURGERY
Washington, D. C.

"Physical Therapy, USN." This exhibit in the form of a seascape diorama, geographically shows a huge painting framed by a large anchor and seal. Some highlights of the physical therapy training in the Medical Department of the Navy are portrayed on wing panels at both ends of the exhibit.

VETERANS ADMINISTRATION HOSPITAL
Hines, Illinois

"Electrophysiological Brace for Foot Drop in Hemiplegics." The concept of "functional electrotherapy" employing electrical stimulation in carrying out effective movements by activating muscles which are paralyzed as a result of upper neuron involvement is shown. This is the beginning of a study which may be extended to other pathological conditions.

VETERANS ADMINISTRATION
Washington, D. C.

This exhibit illustrates wheel chair accessories which can be prescribed for greater independence of patients. The various disabilities will be listed with the accessories to show accessories required.

AMERICAN WHEEL CHAIR, DIVISION OF INSTITUTIONAL INDUSTRIES, INC.
Cincinnati, Ohio
Booth 32

American Wheel Chair Division exhibits wheel chairs, walkers, get-about chairs and commodes. The American Line includes wheel chairs with removable arms, interchangeable footrests, legrests and reclining backs. Featured items: the AMERICAN SUPREME with removable, reversible, adpustable height arms; the New Adult Folding Walker, and New Child Training Walker.

THE JOHN BUNN CORPORATION
Buffalo, New York
Booth 19

Presenting the revised Franklin Hospital Bed which has received increased acceptance from pnysicians and rehabilitation authorities the world over. Newly designed foot-board and attachments permit easier handling of patients with continued automatic elevation and positioning. The Bunn Air Pulsating Pad for relief of decubitus ulcers proves quieter and more reliable.

THE BURDICK CORPORATION
Milton, Wisconsin
Booth 1

The Burdick Corporation will display representative items of their modern line of physical medicine equipment including Ultrasonic, (continuous and pulsed), conventional and Microwave short wave Diathermy and electrical stimulating equipment.

CHATTANOOGA PHARMACAL CO., INC.
Chattanooga, Tennessee
Booth 35

Welcome to the Hydrocollator Booth. See our new Neck Contour Pack. With the special Cover-Sling, the Neck Contour Pack is secure regardless of the patient's position. Effective moist heat can be applied easily during cervical traction. The full Hydrocollator line of steam packs and Master Units will be displayed.

THE COCA-COLA COMPANY
New York, New York
Booth 4

Ice-cold Coca-Cola served through the courtesy and co-operation of the Coca-cola Bottling Co. of Chicago, Inc., and the Coca-Cola Company.

COLSON CORPORATION
Chicago, Illinois
Booth 5

Colson Corporation will exhibit a selection of Wheel Chairs in a well established line of models to meet the needs of those seeking both comfort and quality construction and design. Years of experience in building Wheel Chairs and accessories have gone into these units.

DANIELS SURGICAL & MEDICAL SUPPLIES, INC.
Chicago, Illinois
Booths 2-3

DANIELS, Mid-America's ultra modern facilities serving your modern physical therapy needs, features newest "Top Line Brand Equipment." Burdick's Pulsed Ultrasound W/Muscle Stimulation; Microwave, Infrared and Ultraviolet; Liebel Flarsheim's Diathermy; Dallon's Diathermy and Ultrasound; Ille and Logan Hydrotherapy Units; Tru-Eze Tractomatic. Hydrocollators. Brewer's New Portable Whirlpool.

DYNAWAVE CORPORATION
Staunton, Virginia
Booth 29

DynaWave delivers undirectional, very short duration electric pulses, continuously adjustable from zero to 450 volts. The advantage of working in a range from zero to 450 volts is that there is no burn and no discomfort. You are cordially invited to visit our booth to see the DynaWave unit.

ELGIN EXERCISE APPLIANCE COMPANY
Elgin, Illinois
Booths 8-9

The originators and manufacturers of PROGRESSIVE RESISTANCE EXERCISE EQUIPMENT again provide the latest designed equipment. The NEW ELGIN EXERCISE CHAIR, excellent for resistive, assistive, or reciprocal motion exercise, requires minimum space. The ELGIN EXERCISE UNIT, MODEL A-1500 used in hospitals and rehabilitation centers throughout the world is on display.

ENCYCLOPEDIA AMERICANA
Grand Rapids, Michigan
Booth 10

ENCYCLOPEDIA AMERICANA cordially invites you to inspect their 1961 edition which leading educators find superior and prefer to any other reference work. No accredited school, college, university, or library is without it. The United States government has ordered more than a thousand sets. We have a souvenir for you without obligation.

EVEREST & JENNINGS, INC.
Los Angeles, California
Booths 23-24

Everest and Jennings will exhibit many new products in the hospital and rehabilitation fields. The Hoyer Lifter will be featured also. We invite you to visit our booth for complete information. Be sure to pick up your free notebook and pencil.

FASCOLE CORPORATION
New York, New York
Booths 21-22

See the NEW MULTI-HEIGHT HYDRAULIC LOUNGE, CHAIR and COT plus highlights from our complete line of physical medicine and rehabilitation equipment featuring the latest devices, self-help aids, and exercise equipment available with service you can rely upon. Get your copy of the FASCOLE CATALOG, the most complete reference in the field.

J. E. HANGER, INC.
Chicago, Illinois
Booth 15

We invite you to visit the J. E. Hanger, Inc. booth and see the latest in prosthetic appliances. Our trained personnel will be happy to explain in detail, all appliances, and introduce our new PATELLA TENDON BEARING limb. Stop in, and receive our Centennial gift.

ILLE ELECTRIC CORPORATION
Williamsport, Pennsylvania
Booth 36

Ille Electric Corporation welcomes you to their booth to see the latest available units for the aftercare treatment of fractures and for muscle improvement of many disabling conditions. They will display the famous TWO (2) MOTOR MOBILE WHIRLPOOL BATH, Paraffin Bath and Moistaire Heat Therapy Unit.

JEAN MEDICAL PRODUCTS SALES COMPANY
Alhambra, California
Booth 50

"StandAlone" Therapeutic Aid enables paralyzed or other disabled persons to stand correctly supported and to motivate themselves as easily as in a wheel chair. Invented and used successfully for two years by paralyzed WW II veterans. "Aeropedic" cushion and mattress pad provide increased comfort for patients confined to bed or chair.

PAUL E. JOHNSON MFRS., INC.
Chicago, Illinois
Booth 37

The sole manufacturer of carbon arc ultraviolet lamps also offers the profession infrared lamps producing radiation from 7,700 A.U. through 80,000 A.U. with wattages from 450W through 1,450W. Paul E. Johnson Mfrs., Inc., pioneer manufacturers in the therapeutic lamp field, has served you fifty-four years under the same family management.

LaBERNE MANUFACTURING COMPANY, INC.
Columbia, South Carolina
Booth 31

LaBerne will exhibit the following new equipment: Portable Ankle Exerciser, with controlled resistance for eversion, inversion, dorsiflexion and plantarflexion exercise; Pronator-Supinator with selected controlled resistance; Extension-Flexion Exercise Unit, offering controlled calibrated resistance to the knee muscle group; Shoulder Rotator for internal and external rotation; and Hip Rotator.

MEDCO PRODUCTS CO., INC.
Tulsa, Oklahoma
Booth 7

The MEDCO-SONLATOR provides a new concept in therapy by combining muscle stimulation and ultrasound simultaneously through a SINGLE Three-Way Sound Applicator. The MEDCO-SONLATOR is a distinct advance in the effectiveness of physical therapy in your department. A few minutes spent in our booth should prove of value to you.

MIDWEST IMPORTS
PHYSICAL MEDICINE DIVISION
Hinsdale, Illinois
Booth 17

The PHYSICAL MEDICINE DIVISION OF MIDWEST IMPORTS exhibits the SIEMENS PHYSICAL MEDICINE line, appreciated in ninety-two countries; a complete line of low volt generators, a thermal cabinet and a new infrared lamp. See the new SIEMENS ULTRATHERM Super-Automatic diathermy machines with automatic tuner SERVOMAT as well as other advancements.

N-K PRODUCTS COMPANY, INC.
Santa Cruz, California
Booth 6

Of special interest to physical therapists will be the new Johnson Intermittent Traction Unit which uses a positive weight principle; the N-K Portable Rolling Traction Table Top for pelvic or cervical traction; and the Porto-Gym combination exercise unit. Several new products and specialty items will be shown also.

J. A. PRESTON CORPORATION
New York, New York
Booths 25-28

Welcome to our many friends. See over 300 interesting items from the Complete PRESTON Line including a new low volt generator, walkers, A.D.L. equipment, exercise apparatus, whirlpools, and books. Depend on Preston for all your needs. Please send orders and inquiries to J. A. PRESTON CORP., 71 FIFTH AVENUE, NEW YORK 3, N. Y.

REHABILITATION PRODUCTS, DIVISION OF AMERICAN HOSPITAL SUPPLY CORPORATION
Evanston, Illinois
Booth 33

Selected products of diagnostic, physical therapy and rehabilitation equipment: Washex Automatic Toilet Seat, Tomac All-Purpose Table, Tomac Snap-On Covers for hydrocollator packs, Miller Twister, Tomac electrotherapy equipment, invalid walkers, help devices. Register for the new R/P Products Bulletin. Our staff with fifteen regional offices is eager to serve you.

TECA CORPORATION
White Plains, New York
Booth 47

SEE TECA for the latest in electrodiagnosis and electrotherapy. Low volt generators, chronaxie meters and new Teca electromyographs will be in operation. New photo recording and conduction time testing features will be shown. For the first time TECA will demonstrate a new compact single channel EMG with photo recording and conduction time testing facilities.

THERATRON CORPORATION
St. Paul, Minnesota
Booth 11

Theratron Corporation, development pioneers of miniaturized electro-therapeutic instruments for clinical and home use, will display muscle stimulators, cast-imbedded electrodes, and electronic muscle. Theratron-developed muscle stimulators are compact, versatile and produce virtually no discomfort. The electronic muscle will make braces and splints obsolete in many neuromuscular disorders.

TRU-EZE MANUFACTURING CO., INC.
Burbank, California
Booth 34

OPTIMAL RESULTS! IMPROVED DEVICES! EXTRA HANDS for the busy therapist. Effective traction is provided without additional help. See the TRACTOMATIC, portable intermittent traction machine; the "TRU-TRAC" traction and therapy table with free-wheeling ball-bearing rollers; and the "TRU-TRACT" flexion traction chair. See the ORIGINAL and improved traction sets for home use.

THE WHITEHALL ELECTRO MEDICAL CO., INC.
Passaic, New Jersey
Booth 14

Don't miss seeing the Whitehall "LoBoy" whirlpool bath, the original whirlpool with the LOW tank profile, offering greater comfort and easy access into and out of the tank. Also on display: the AQUA/WHIRL portable whirpool bath for use in any bath tub. WHITEHALL sets the pace in hydrotherapy equipment.

ZIMMER MANUFACTURING COMPANY
Warsaw, Indiana
Booth 13

Our exhibit will present an entirely new concept in a Head Halter for Cervical traction, the Exo-Static Cervical Collar, Fas-Trac for applying positive traction of the extremities as well as many other items for use in physical therapy departments.

Deadline Additions

THE LA NAIR CO.
Houston, Texas
Booth 30

We extend an invitation to delegates and all others attending the A.P.T.A. Conference to examine our equipment on exhibit at this meeting. See our new UNIVERSAL EXERCISE UNIT and our ELECTRICALLY OPERATED ADJUSTABLE STEPS. We believe this equipment to be the most advanced of its kind on the market today.

PARKER LABORATORIES, INC.
Irvington, New Jersey
Booth 12

You are invited to see AQUASONIC 100, a clear aqueous gel, which provides 100 percent transmission of ultrasonic waves, is an excellent conductor of electrical impulses, approved by leading manufacturers of ultrasound equipment. AQUAPOOL, a perfect concentrated additive for hydrotherapy, is economical, easy to use and time-saving. Samples available.

ENCYCLOPAEDIA BRITANNICA, INC.
Chicago, Illinois
Booth 44

LUMEX, INC.
Bellmore, New York
Booth 16

SCULLY-WALTON SERVICES, INC.
Chicago, Illinois
Booth 42

STANLEY PHYSICAL THERAPY EQUIPMENT & SUPPLY CO.
Chicago, Illinois
Booth 39

PHYSICAL THERAPY SECTION
BROOKE GENERAL HOSPITAL
Brooke Army Medical Center
Fort Sam Houston, Texas

Exhibitors!

Your attention is directed to "The Market Is Here and Will be There," pages 31-32.

Conference Speakers

Mildred I. Lineberger is Program Co-ordinator at the Area Child Amputee Center of the Michigan Crippled Children Commission. A graduate of Blodgett Memorial Hospital School of Nursing, Miss Lineberger received the bachelor of science degree at Teachers College, Columbia University. During World War II Miss Lineberger served the Army Nurse Corps as an instructor at the Medical and Surgical Technician School, Lawson General Hospital in Atlanta. After discharge she was employed as a nurse with the Michigan Commission. She interrupted this employment to study and receive the certificate in physical therapy at the Medical College of Virginia in 1948. Miss Lineberger has attended various courses of prosthetic education and is the author of "Children Who Need Prostheses" (*Nursing Outlook*, January 1959). The Wednesday morning concurrent session on "The Pediatric Patient" will include Miss Lineberger's discussion of "Treatment of Child Amputees."

Gilbert Lanoff, M.D., is Instructor of Pediatrics at Northwestern University Medical School, and Attending Allergist at Children's Memorial Hospital in Chicago. A graduate of Northwestern University, he received the doctor of medicine degree at the University of Illinois in 1948. Dr. Lanoff is a Fellow of the American Academy of Allergy, a Fellow of the American Academy of Pediatrics, and a member of the American College of Allergists. He has published articles on the use of antihistaminic drugs in children and on fatalities of bronchial asthma. "The Medical Aspects of Asthma" will be Dr. Lanoff's topic during the Thursday morning concurrent session on "The Pediatric Patient."

Edward J. Rathjen practices physical therapy at the Rehabilitation Center of San Jose, San Jose, California. Mr. Rathjen is a graduate of San Francisco State College and received the certificate in physical therapy from Stanford University. He was employed at California Rehabilitation Center (then Kabat-Kaiser Institute) in Vallejo from 1948 to 1953. During World War II Mr. Rathjen served as a Physical Training Instructor with the United States Army Air Corps. With two other physical therapists, he will discuss "Treatment Procedures for Whiplash Injuries" on Thursday morning, the concurrent session on "The Ambulatory Adult Patient."

Elma G. Spreckley is a Staff Physical Therapist with the Community Nursing Services of Philadelphia, a combination of the Visiting Nurse Society and the Division of Nursing of the Department of Health of Philadelphia. Mrs. Spreckley received the bachelor of science degree in physical therapy from the University of Connecticut and has been a graduate student at the University of Pennsylvania. Her professional employment includes other positions as staff therapist at Hartford Hospital, Hartford, Connecticut; and Hedgecroft Hospital, Houston, Texas. On Friday morning Mrs. Spreckley will discuss "Treatment of the Geriatric Patient in the Family Home."

Benjamin Blackman, M.D., is an Associate in the Department of Psychiatry and Assistant Director of the Outpatient Psychiatric Clinic at Northwestern University Medical School. Dr. Blackman engages in the private practice of psychiatry and is a member of the Attending Staff of Chicago Wesley Memorial Hospital. He is a graduate of Northwestern University and of its Medical School. Dr. Blackman is a Diplomate of the American Board of Psychiatry and Neurology and holds membership in organizations related to his specialty including the American Psychiatric Association and the Illinois Psychiatric Society. He is a member of Alpha Omega Alpha (Scholastic Honorary Medical Society). On Wednesday morning Dr. Blackman will present "Behavioral Aspects of Aging" to members interested in "The Geriatric Patient."

George M. Cummins, Jr., M.D., is Assistant Professor of Medicine at Northwestern University Medical School and serves as Senior Attending Staff to Chicago Wesley Memorial Hospital. After graduation from St. Ambrose College, he received his medical education at Rush Medical School, University of Chicago, in 1941 and the master of science degree from Northwestern University Medical School in 1947. Dr. Cummins is a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of Alpha Omega Alpha (Scholastic Honorary Medical Society). He is the author of twenty articles published in medical journals. On Wednesday morning, the concurrent session on "The Geriatric Patient," Dr. Cummins will discuss "The Aging Process."

Sumati Nair, M.D., is a Research Fellow in Pediatrics at Children's Memorial Hospital, Chicago, and Northwestern University Medical School where she is investigating genetics and metabolism. Dr. Nair attended Ephinstone College in Bombay and received her medical education at Seth G. S. Medical College, also in Bombay. Later she studied at Harvard University and the University of Chicago during the periods when she held research fellowships in pediatrics and hematology at Boston City Hospital and at the University of Chicago. Dr. Nair will participate in the Conference program when she presents "The Medical Aspects of Cystic Fibrosis" during the concurrent session on "The Pediatric Patient" on Thursday morning.

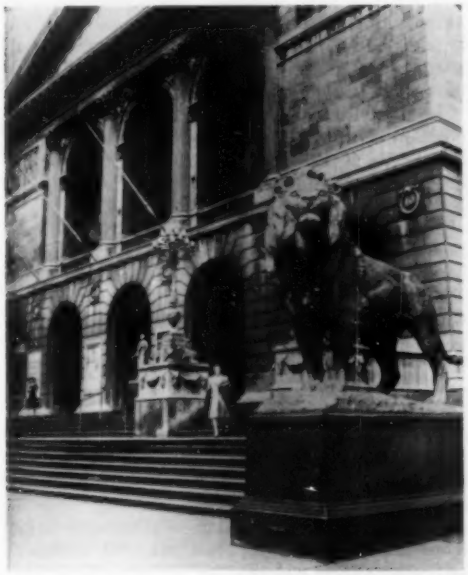
Edna Nicholson, Executive Director of the Institute of Medicine of Chicago, serves as Special Consultant, Division of Hospital Facilities, United States Public Health Service. She also holds an appointment as Special Lecturer, Program in Hospital Administration, Northwestern University. Miss Nicholson received the bachelor of arts degree, the master of science in public health and a certificate in social work from the University of Michigan. Among her previous positions and appointments are Assistant Director of the Social Service Department, Cook County Hospital and Instructor in Social Aspects of Nursing, Cook County School of Nursing; Consultant on Medical Assistance, Bureau of Public Assistance, United States Department of Health, Education, and Welfare; and Director, Central Service for the Chronically Ill, Institute of Medicine of Chicago. Miss Nicholson received the Cancer Care Award from the National Cancer Foundation in 1955, and in 1959 was cited by the Mayor of the City of Chicago for her contributions on behalf of the chronically ill of Chicago. Her professional memberships include the American Public Health Association and the National Association of Social Workers. The author of several articles on the care of the chronically ill and community resources. Miss Nicholson's book entitled, "Planning Institutional Facilities for Long Term Care", was published by G. P. Putnam's Sons, New York, 1956. "Who Belongs Where and the Cost of Care" is to be discussed by Miss Nicholson on Friday afternoon. Her presentation will climax the scientific sessions of the Thirty-Eighth Annual Conference.

Frances L. Patton is Chief Physical Therapist at Los Angeles County General Hospital and also holds an appointment as Instructor, Department of Physical Medicine, University of Southern California Medical School. A graduate of Oregon State College, Miss Patton received the bachelor of science degree from the Department of Nursing Education, University of Oregon Medical School. She served with the United States Army Nurse Corps, 1945-1946, and then as a caseworker and county administrator with the Oregon State Public Welfare Commission. In 1951 she received the certificate in physical therapy at the University of Southern California and joined the staff at Los Angeles County General Hospital where she served in various positions before assuming her present position. "Treatment of Hip Fractures" will be Miss Patton's topic during the Thursday morning concurrent session on "The Geriatric Patient."

Mary F. Young, M.D., is Psychiatric Resident at the Veterans Administration Hospital in Downey, Illinois, a co-operating hospital of Northwestern University Medical School. Dr. Young also holds an appointment as Research Associate in Medicine at Northwestern University. She received the bachelor of science in nursing at St. Mary of the Springs College, Columbus, Ohio and the doctor of medicine degree from Ohio State University College of Medicine. From November 1957 to June 1960, Dr. Young participated in a case study of traffic accidents conducted by the Department of Medicine of Northwestern University Medical School. She contributed to the Northwestern University Traffic Institute in 1961 by presenting "Medical Aspects of Traffic Accidents." During the Friday morning concurrent session on "The Ambulatory Adult Patient", Dr. Young will discuss "Behavioral Causes of Traffic Accidents."

Elizabeth Zausmer is Associate Director of Physical Therapy at Children's Hospital Center in Boston and is a lecturer at Simmons College. Mrs. Zausmer received the certificate in physical therapy from Harvard Medical School, Courses for Graduates and has earned the bachelor of science and master degrees in education at Boston University. She is author of several articles published in the Review, the most recent being "Evaluation of Strength and Motor Development in Infants" (November and December 1953.) Mrs. Zausmer's topic will be "Physical Therapy for Children with Cystic Fibrosis" which she will discuss on Thursday morning during the concurrent session, "The Pediatric Patient."

Do-it-Yourself Sightseeing



Just arrived in Chicago! I pulled in and parked. Straight ahead is Lake Michigan. It is a great lake! It became misty. I must have been there for hours. When I realized that this week was vanishing, I reached for the key to my Jaguar. I felt myself zooming (Oops, one way) around the Adler Planetarium. Stop sign. Turn right. The John G. Shedd aquarium, built of white Georgia marble, of simple Doric architecture, harmonizing with its neighbor (across the street), the Chicago Natural History Museum. I understand they are opening an exciting new hall to display a cultural panorama of the Polynesian and Micronesian areas of the South Pacific. No parking places. Darn, I'm certain to have missed a porpoise, caught in a dripping net by some fisherman. There I was being swept up Lake Shore Drive.

There's the band shell! This must be Grant Park. Understand the symphony is doing a Liszt-Gershwin program on Sunday night, July 2. Free, too! Nationally famous pianist, Jorge Bolet will be the soloist and the guest conductor is Milton Katims, director of the Seattle Symphony. No, I didn't meet him when I was in Seattle.

Thank heavens! A red light. Look! The Buckingham Fountain. At night the display is a miracle of changing, dazzling colors.

I am only a couple of blocks from the Palmer House. Can't turn left now. There on my right is the Chicago Harbor and the Yacht Club. Wish I had time to stop. There's Navy Pier. They say it is a mile long.

Let's see, if I turn right I'll pass Loyala University, then Northwestern University, and the Bahai Temple. It's half way around the world from the only other one in existence. There's the famous Oak Street Beach. Guess I'd better take a left here and head south. Gee, Michigan Avenue is a beauty! Just two blocks over to Holy Name Cathedral. It's said to bear chips made by stray bullets from a ruckus with Al Capone in 1924.

Boy, I'd better watch where I'm going. Almost ran into the Water Tower. Right down that street is Woody's P.T. school. There's Ohio Street where Illinois Chapter meetings are held. On my right, the Wrigley Building and across the street the Tribune Tower.

There's the Chicago Public Library. It burned, too, you know. Have they ever got a research library! Wow! It was started under a bequest by John Crerar of the Joliet Steel Company. Golly, I can just feel my I.Q. rising.

Ah! There's the Art Institute: I'll park right here. What did you say, officer? Oh, I can't? Well, I thought it was such a wonderful place to park. Some people just can't stand authority! There's nothing like the sound of your own footsteps on the polished floor of an art gallery. By now, I was feeling terribly highbrow.

As I pulled away from the curb, I noticed Orchestra Hall, home of the Chicago Symphony orchestra, right across the street. Thanks to the director, Dr. Fritz Reiner, they now enjoy a place among the finest organizations in the world, and it is thought by many to be one of the best symphony orchestras.

If you turn right here, you're just minutes from the Brookfield Zoo. I spent four hours there last Sunday. Do you know they don't even have bars on their cages! They do it with some modern construction.

There's Pershing Road. A quick right turn and Comiskey Park, the International Amphitheater, and Stock Yards. Lots of steak on foot down there.

Golly, that didn't take any time at all and here I am at the University of Chicago. There's so much! The Oriental Institute with all the ancient culture of the Near East. Pewter, bronze, hammered brass. Right near here is the Robie

House, an early example of Frank Lloyd Wright's concept of domestic architecture. Then there is Stagg Field. No football, but under the west stands was the site of the first self-sustaining chain reaction. On December 2, 1942, Enrico Fermi and his associates achieved and controlled the release of nuclear energy, ushering in the atomic age.

I am leaving the University now. I just passed the Museum of Science and Industry. This is probably the most famous museum of its kind in the world. It really has some outstanding exhibits: the German Submarine U-505, the only warship boarded and captured during the second World War, a full scale working model of a coal mine, a foundry, and a million volt lightning generator. No P.T. should miss the medical and health sciences exhibit. They display the human heart. When you walk through this giant replica you can watch its principle parts work and actually hear it throb. They have a transparent model showing working organs of the human body. They also show a human cell, one million times larger than life size, in which dozens of people can wander.

Look at that! McCormick Place, the new exposition center. Do you know that the main exhibit area is as big as six football fields and has a volume equal to that of the Empire State Building?

Have no vain regret, I say, for, like Pandora's box, hope remains! Next winter, as I sit, snug by my fireplace, I'll browse through these brochures and become misty again as I think of what might have been. Walk, ride, sail or fly, but, be in Chicago in July!

Chicago Social Events

Illinois Chapter Reception—Luncheon for Charter Members

38th Annual Banquet

Perhaps Chikagou won't be there, but we're sure that the Indian scout of the Conference masthead is watching for you to come to Chicago. The Illinois Chapter is scouting all entertainment possibilities for you. By the time you arrive, the modern-day Illini will be on hand to greet you—their scouting will be finished and you can enjoy the success of their efforts.

On Sunday evening, Illinois Chapter will receive you and will be your hosts at Toddlin' Inn. Decorative posters in the Inn will portray Chicago's highlights. This is the time for you to "break the ice" if you will be a newcomer. Best of all, it will be the first opportunity for many old friends to meet.

Professional Advancement Day (Monday, July 3) will have its social aspects. To celebrate the Association's Fortieth Anniversary without gathering for a meal together would be an oversight. In 1921 the decision to form the Association was made over dinner in New York. So in Chicago, forty years later, you will want to attend the luncheon in honor of Charter members. Planned because of *them* but for *you*, too!

On Thursday evening the thirty-eighth Annual Banquet will be held in the Grand Ballroom and, in keeping with our tradition, will be preceded by the Reception for the Board of Directors. Here you will meet and may congratulate the newly elected Officers, Directors, and member of the Nominating Committee, and can express your thanks for a job well done to those retiring from their Association positions. All members and guests are welcome to attend. Entertainment at the Banquet will be arranged by the Illinois Chapter—there will be fun all the while, Chicago style.

As for the past three years, a combined rate has been established for social events at which meals are served. Send your reservation forms with your check for $12.00 now and enjoy both the luncheon for Charter members and the Annual Banquet.

Theater Party

A theater party has been planned for the evening of Tuesday, July 4. Buses will leave The Palmer House at 7:00 P.M. proceeding along Congress Expressway to Hillside, approximately a thirty minute trip. This is the site of the new Melody Top Musical Theater, the largest music theater in the nation. The show scheduled is "Take Me Along." The cast will include New York and Hollywood stars. A bloc of three-hundred seats has been reserved. While these last, tickets are available at four dollars each, which includes transportation to the theater and return to The Palmer House. Those wishing advance reservations please make checks payable to the Illinois Chapter and send them to Miss Helen J. Johnston, 4950 Marine Drive, Chicago 40, Illinois.

Education

The Physical Therapist as Educational Administrator

"Essentials of an Accepted School of Physical Therapy" published by the Council of Medical Education and Hospitals of the American Medical Association (1955) has advocated certain minimum qualifications for the institutions and persons responsible for "the organization, periodic review, continued development and general effectiveness of the educational program."[1]

In the Essentials, the term "educational administrator" is used to identify the qualified physical therapist functioning at the top level in the physical therapy program of basic professional education. While this term is not entirely appropriate to describe the complete role of such a physical therapist, it will be used in this presentation.

The assigned responsibility and degree of authority of educational administrators in the individual educational programs differ somewhat due to variation in the organizational patterns of the sponsoring institutions, enrollment capacity of the training programs and the abilities and experience of the personnel involved.

As an example of the wide variance in organizational patterns of the currently approved programs, one is a school of the university while another is a department of a division in a school of the university. The different organizational patterns necessarily affect the degree of autonomy in the program, as well as the educational administrator's authority and the channels through which he must function.

Variation in programs also exist since the curriculum in physical therapy is one unit of a teaching institution that has an established philosophy, aim and structure. The faculty of each institution must act in accordance with these established patterns and principles.

Regardless of the particular philosophy, aim and structure of the sponsoring institution and organizational pattern of the physical therapy program, educational administrators must assume one unique responsibility—to provide a program which will develop in the student the desire and ability to be a competent, ethical physical therapist. It must be pointed out that while this is the prime goal of the entire faculty serving the program, the educational administrator must assume responsibility and leadership in developing and evaluating policies, plans, and activities which will meet that objective.

To fulfill his responsibility, the educational administrator must be familiar with, and interested in, more than the application of physical therapy procedures. Since the program is part of the total program of the sponsoring institution, the educational administrator must know the policies of the institution and apply sound administrative principles in relation to both superiors and subordinates. In addition, the more precise aims of the physical therapy curriculum must reflect and achieve the pervasive aims of the institution. As a director of an educational program within a teaching institution, the educational administrator must be versed in basic principles and trends in education, counseling, recruitment and selection of students.

Since physical therapy is a part of the health field spectrum, it is essential that the educational administrator be cognizant of developments in closely related fields so as to prepare the student for participation as a co-operating, contributing professional person, working toward the goal of all health services—better patient care.

The educational administrator can be considered the catalyst in the complex interactions involved in the development of professional physical therapists. As such, he should be strongly identified with the Physical Therapy profession through knowledge of current practices in the field, participation in the professional association, compliance with its Code of Ethics, and leadership in the development and maintenance of high professional standards of education and service.

It is not enough for a profession or its educators to provide programs that meet present day clinical requirements. The program of today is educating the physical therapist of the future. To meet the constantly changing demands of professional practice, the educational administrator must perceive the needs of the future and initiate appropriate action in adjusting the curriculum by constantly exploring the frontiers of knowledge with his staff and students.

To be a strong force in attaining a timely, vital and comprehensive curriculum is the real challenge and responsibility of the educational administrator in physical therapy.

Publications Committee
Council of Physical Therapy School Directors
Elizabeth Addoms
Mary Callahan
Beatrice Schulz, Chairman

[1] Essentials of an Acceptable School of Physical Therapy. Council on Medical Education and Hospitals of the American Medical Association December 1, 1955. Sect. 1-3.

Schools Offering Courses in Physical Therapy

APPROVED BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS, AMERICAN MEDICAL ASSOCIATION IN COLLABORATION WITH THE AMERICAN PHYSICAL THERAPY ASSOCIATION

NOTE: Schools offering the four-year program leading to a baccalaureate degree accept high school graduates and transfer students. Schools offering the program of 12 to 16 months leading to a certificate accept students who have completed all or most of their undergraduate work, provided they meet certain course requirements. Students should arrange their college work so that on graduation they will hold baccalaureate degrees regardless of the plan of study, and should investigate course requirements early. For specific information regarding each school's requirements, curriculum, tuition, and other fees, write to the physical therapy director, indicated below, *not* the American Physical Therapy Association. Key to symbols: (*) Degree Course (†) Certificate Course (‡) Baccalaureate degree available from an affiliating college or university (§) Accepts women students only.

CALIFORNIA

Mary J. Dodge
†‡School of Physical Therapy
Childrens Hospital Society
4614 Sunset Boulevard, Los Angeles 27

Ronald A. Hershey
*†School of Physical Therapy
College of Medical Evangelists, Loma Linda

Lucille Daniels
*†Division of Physical Therapy
School of Medicine
Stanford University, Stanford (Palo Alto)

Margery L. Wagner
*†Curriculum in Physical Therapy
University of California
The Medical Center, San Francisco 22

Margaret S. Rood
*†Department of Physical Therapy
University of Southern California, Los Angeles 7

COLORADO

Dorothy Hoag
*†Curriculum in Physical Therapy
University of Colorado Medical School, Denver 20

CONNECTICUT

Frances M. Tappan
*School of Physical Therapy
U 101 University of Connecticut, Storrs

FLORIDA

Barbara C. White
*Curriculum in Physical Therapy
J. Hillis Miller Health Center, Box 62
University of Florida, Gainesville

ILLINOIS

Elizabeth C. Wood
*†Course in Physical Therapy
Northwestern University Medical School
303 East Chicago Avenue, Chicago 11

INDIANA

Frances C. Ekstam
*Physical Therapy Program
School of Medicine
Indiana University Medical Center, Indianapolis 7

IOWA

Olive C. Farr
†Physical Therapy
State University of Iowa Hospitals, Iowa City

KANSAS

Ruth G. Monteith
*†Section of Physical Therapy Education
University of Kansas Medical Center, Kansas City 12

MARYLAND

Gladys E. Wadsworth, Ph.D.
*Department of Physical Therapy
School of Medicine
University of Maryland, Baltimore 1

MASSACHUSETTS

Adelaide L. McGarrett
*†Division of Physical Therapy
Boston University Sargent College
University Road, Boston 15

Constance K. Greene
*§Department of Physical Therapy
Bouvé-Boston School, in affiliation with Tufts University, Medford 55

Shirley M. Cogland
*†§Program in Physical Therapy
Simmons College
The Fenway, Boston 15

MICHIGAN

Virginia Wilson
*†Curriculum in Physical Therapy
The University of Michigan
University Hospital, Ann Arbor

MINNESOTA

Dale V. Shaffer
†‡School of Physical Therapy
Mayo Clinic, Rochester

Wilbur L. Moen
*Course in Physical Therapy
University of Minnesota
860 Mayo Memorial Building, Minneapolis 14

MISSOURI

Sr. M. Imelda, S.S.M.
*Department of Physical Therapy
St. Louis University
1325 South Grand Boulevard, St. Louis 4

Beatrice F. Schulz
*Department of Physical Therapy
Washington University School of Medicine
660 So. Kingshighway, St. Louis 10

NEW YORK

Dorothy L. McLaughlin
Russell Sage College-Albany Medical College
*†Division of Physical Therapy, Albany 8

Mary E. Callahan
*‡Courses for Physical Therapists
Columbia University
College of Physicians & Surgeons
630 West 168th Street, New York 32

A. Garman Dingwall
*Division of Physical Therapy
Ithaca College-Albert Einstein College of Medicine
Ithaca

Elizabeth C. Addoms
*†Physical Therapy Curriculum
School of Education, New York University
Washington Square East, New York 3

Mildred F. Heap
*†Program in Physical Therapy
University of Buffalo
3435 Main Street, Buffalo 14

NORTH CAROLINA

†Helen Kaiser
Box 3247, Duke University Medical Center, Durham

Margaret L. Moore
*Section of Physical Therapy
School of Medicine
University of North Carolina, Chapel Hill

OHIO

Robert D. Kruse, D.P.E.
†‡Course in Physical Therapy
Frank E. Bunts Educational Institute
2020 East 93rd Street, Cleveland 6

Gladys G. Woods
*†Curriculum of Physical Therapy
Ohio State University
University Hospital, Columbus

OKLAHOMA

Thelma Pedersen
*†School of Physical Therapy
University of Oklahoma, Medical Center
Oklahoma City 4

PENNSYLVANIA

Dorothy E. Baethke
*†Division of Physical Therapy
University of Pennsylvania
3901 Pine Street, Philadelphia 4

Kathryn Kelley
†‡Division of Physical Therapy
D. T. Watson School of Physiatrics, Leetsdale

PUERTO RICO

(all classes given in Spanish)
Lutgarda V. Piñeiro
*School of Physical & Occupational Therapy
Candelaria & Mandry Streets, Stop 22, Santurce

TEXAS

Doris E. Porter
*†Grady Vaughn School of Physical Therapy
Baylor University Medical Center, Dallas 10

Cecelia J. Lee
†‡School of Physical Therapy
Hermann Hospital, Houston 25

Ruby Decker
*†School of Physical Therapy
The University of Texas Medical Branch, Galveston

VIRGINIA

Susanne Hirt
*School of Physical Therapy
Medical College of Virginia, Richmond 19

WASHINGTON

George D. Brunner
*Curriculum in Physical Therapy
CC 814 University Hospital
University of Washington, Seattle 5

WISCONSIN

Beth J. Phillips
*Curriculum in Physical Therapy
Marquette University School of Medicine
561 North 15th Street, Milwaukee 3

Margaret Kohli
*Course in Physical Therapy
University of Wisconsin, Madison 6

U. S. ARMY MEDICAL SERVICE

†§Physical Therapy Course
Medical Field Service School
Brooke Army Medical Center
Fort Sam Houston, Texas
Write to: The Surgeon General
Department of the Army, Washington 25, D.C.
Att.: Personnel Division

An illness has an intense psychologic effect. In transient illnesses it is considered of little importance. When, however, the disease seems to threaten one's life, or one's social or economic position, or one's hopes and ambitions, it becomes a matter of profound psychologic importance. The effects of great anxiety may vary with different people and different situations, but invariably anxiety and one's body tends to disturb the regulation of the autonomic nervous system and to aggravate the symptoms of the disease. When one's health seems to be seriously threatened, the most important and disabling symptom is a feeling of weakness and utter exhaustion bordering on collapse, quite out of proportion to the constitutional effects of the actual illness.—ORGEL, *J. Internat. Coll. Surgeons*, 32:430 October 1959

SHORT TERM COURSES FOR GRADUATE PHYSICAL THERAPISTS

Title of Course	*Sponsor of Course*	*For Details Contact*	*Dates of Course*
Cerebral Palsy	The North Carolina Cerebral Palsy Hospital Durham, North Carolina	Lenox D. Baker, M.D. Medical Director No. Carolina C. P. Hosp. Durham, North Carolina	Courses arranged according to individual need—duration 3 months
Cerebral Palsy Technics of Treatment	Children's Rehabilitation Institute for Cerebral Palsy Reisterstown, Maryland	Christopher H. Wiemer Executive Director Children's Rehab. Inst. Reisterstown, Maryland	July 3—Sept. 15, 1961 Oct. 2—Dec. 15, 1961
Theory and Technic of Treatment and Care of Neuromuscular and Musculoskeletal Disorders	Georgia Warm Springs Foundation Warm Springs, Georgia	Robert L. Bennett, M.D. Director Ga. Warm Springs Found. Warm Springs, Georgia	June 16 or Sept. 8, 1961 Sept. 25, 1961 Dec. 15, 1961 or Mar. 23, 1961
Technics of Neuromuscular Facilitation	California Rehabilitation Center Vallejo, California	Margaret Knott, Chief P.T. Calif. Rehab. Center Vallejo, Calif.	April 1 July 1 October 1
Graduate Physical Therapy Program	Rancho Los Amigos Hospital Downey, California	Chief Physical Therapist Rancho Los Amigos Hospital 7601 E. Imperial Highway Downey, California	2nd Monday in Sept. to 1st Monday in March
Advanced Physical Rehabilitation Methods for Physical/Occupational Therapists	New York University Medical Center—Institute of Physical Medicine and Rehabilitation (in cooperation with New York University School of Education)	Edith Buchwald Lawton, Director, Postgraduate Education for Paramedical Personnel, New York University Medical Center, Institute of Physical Medicine and Rehabilitation. 400 East 34 Street New York 16, N. Y.	Nov. 13—Dec. 8, 1961 Feb. 5,—Mar. 2, 1962 April 30—May 25, 1962
Neurophysiology in the Treatment of Neuromuscular Dysfunction (P. T. 511)	U. of So. California Physical Therapy Dept. University Park Los Angeles 7, Calif.	Margaret S. Rood U. of Southern California	June 12—30, 1961 Oct. 9—20, 1961
Anatomy for Therapists (P. T. 502a)	U. of So. California Physical Therapy Dept. University Park Los Angeles 7, Calif.	Roxie Morris U. of Southern California	July 31—Aug. 25, 1961
Upper-Extremity Prosthetics	Northwestern U. and U.S. Office of Vocational Rehabilitation	Director of Prosthetic Education Northwestern U. Med. School 401 E. Ohio Street Chicago 11, Illinois	June 5—9, 1961
Analysis of Neuromuscular Problems of Cerebral Palsy; Practice of Treatment Procedures	Division of Physical Therapy Stanford University	Miss Sarah Semans Division of Physical Therapy Room R228, Edwards Building Stanford Medical Center Palo Alto, Calif.	June 26—Aug. 4, 1961
Kinesthetic Perception (Psychology 152)	Tufts University Summer School	Frank P. Jones, Ph.D. Institute for Psychological Research Tufts University Medford 55, Mass.	July 5—Aug. 18, 1961

Analysis & Synthesis of Human Motion	New York University School of Education	Elizabeth C. Addoms Program Director Physical Therapy Div. School of Education Washington Square East New York 3, New York	July 5-August 7, 1961
Cystic Fibrosis (Physical Therapy in the Treatment of Cystic Fibrosis)	Children's Hospital Medical Center	Shirley M. Cogland Director, Physical Therapy Children's Hospital Medical Center 300 Longwood Avenue Boston, Mass.	Sept. 18-21, 1961

Films of Interest

The Eye—21 min., color, sd., 1956. (Autonomic nervous system series, no. 5). The National Foundation. This film presents the autonomic innervation of the eye and its muscles and vessels. It shows the reflex pathways in the pupillary light reflex and in accommodation and describes Horner's syndrome and oculomotor nerve paralysis.

Principles of Respiratory Mechanics, Part I—20 min., color, sd., 1954. Department of Professional Education, The National Foundation, 800 2nd Avenue, New York 17, N. Y. Presents such basic concepts as the elastic and resistive properties of the lungs and pressure-volume relationships. Uses animated drawings, normal subjects, and patients to illustrate the behaviour of the lungs in normal and pathological states.

Principles of Respiratory Mechanics, Part II—20 min., color, sd., 1955. The National Foundation. This film demonstrates the pathological respiratory mechanics in asthma, pulmonary fibrosis, and paralysis. Drawings and models are used to explain the value of mechanical measurements.

The Larynx and Voice: Physiology of the Larynx Under Daily Stress—23 min., color, sd. Rental. Hans von Leden, M.D., 30 N. Michigan Ave., Chicago. The larynx in action is demonstrated through the use of many high speed pictures. The physics of laryngeal activity and how tone is produced and modified is discussed. The film is designed as an advanced study of the larynx for those who already have some knowledge of laryngeal structure and function.

Mouth to Mouth Rescue Breathing—10 min., color, sd., 1958. Walter Reed Army Institute of Research, Washington 12, D. C. The ability of a rescuer to provide a victim with a greater volume of air with the mouth-to-mouth method than with older methods is demonstrated.

Integrative Aspects of the Nervous System, Part Two: The Motor System—47 min., color, sd., 1951. U. S. Army Film Library (PMF 5182-a). Feedback and scanning mechanisms in the nervous system.

Corpus Callosum Function in Intermanual Transfer of Chimpanzee—18 min., color, sd., 1960. Dept. of the Army, Walter Reed Army Institute of Research, Washington 12, D. C. This research film shows the chimpanzee learning to open complicated locks with one hand and then being able to do the same with the untaught hand. The centers and tracts in the nervous system responsible for this transfer ability are described.

The Inner Ear; A Cinematographic Study of Some Aspects of its Anatomy, Physiology, and Pathology—35 min., color, sd., 1951. Medical Film Guild, 506 West 57th Street, New York 19, N. Y. Presents the anatomy of the inner ear, the function of the cochlea, the vibrations of the basilar membrane, labyrinthine, fluids, and the stapes. Meniere's disease is described and the acoustic reflexes of the muscles of the middle ear are shown.

Physical Diagnosis: Gait and Musculoskeletal Disorders—30 min., color, sd., 1960. Service charge $5.00. Audio Visual Utilization Center, Wayne State University, Detroit 2, Michigan. This film begins with a detailed examination of the gait of a normal child. It then analyzes several pathological gaits in children with polio, cerebral palsy, muscular dystrophy, dystonia muscularis, congenital dislocation of the hip, and slipped femoral epiphysis. Examination techniques are demonstrated and the neuromuscular and skeletal disorder causing each abnormal gait is pointed out.

Upper Extremity Prosthetics—23 min., color, sd., 1952. Veterans Administration, Central Office Film Library, Vermont Avenue and H Street, N. W., Washington 25, D. C. This film portrays some of the problems of the arm amputee in accepting and adjusting to a prosthesis. It explains prescription, fabrication, fitting and harnessing and shows various types of prostheses and components. Training, both preprosthetic and prosthetic, is also shown.

Upper Extremity Prosthetic Principles—29 min., color, sd., 1955. Veterans Administration, Central Office Film Library, Vermont Avenue and H Street, N. W., Washington 25, D. C. Shows some of the research in prosthetics and upper extremity function. Describes the functional loss at different levels of amputation, the principles behind prosthetic prescription for each, and the devices and components available.

Technique of Biceps Cineplasty—32 min., color, sd., 1958. The Director, Walter Reed Army Institute of Research, Washington 12, D. C. This film shows the complete biceps cineplasty surgical procedure and postoperative care. It also shows postoperative tunnel exercises and prosthetic training by physical and occupational therapists.

Assistive Devices for the Paralyzed Upper Extremity—10 min., color, sd., 1958. William D. Loeser, M. D., 2183 Main Street, Buffalo 14, N. Y. A wide variety of assistive devices are demonstrated for patients with varying degrees of weakness and paralysis. The devices range from simple supports to slings, feeders, equipment powered by other parts of the body, and motorized feeder equipment.

Abstracts

Venous Stasis in the Lower Extremities

Angus McLachlin, John McLachlin, Thomas Jory and Edward Rawling (Dept. of Surgery, University of Western Ontario Medical School, London, Ontario), ANN. SURG., 152:678-685, October 1960

Venous stasis has been postulated as a cause of thrombosis in human leg veins. With venous stagnation, thrombi showed a marked tendency to form at the apex of venous valve pockets on the central side where stasis was most extreme. The problem of venous stasis during surgery is thus very significant.

Twenty-five patients were studied by injection of a radioopaque dye into the dorsal vein of the foot. The dye was then directed into the deep veins by application of a tourniquet at the ankle. The subsequent clearance time of the venous channels and of the valves or other pockets in the lower extremities was studied by cineradiography and rapid serial x-ray techniques.

Patients were asked to simulate operating room conditions by remaining quiet in the supine horizontal position. An unexpectedly long clearance time was noted. The delay was seen to be longer in older patients. This was thought to be due to previously reported distortion and dilatation in the veins in the soleus muscle with advancing age, combined with a general reduction in body activity. Various methods of reducing stasis were then tested against the base line.

Elevation of the foot of the bed 15°, placing the entire body on a tilt, was found to be the most effective method tested. This was selected as being the maximum tilt at which most operations could be performed.

Elevation of the legs 15°, by flexing the hips with the trunk horizontal, was found to be significantly less effective than the full body tilt, but still produced appreciable improvement in clearance time.

Active exercise of thigh and calf muscles was not as effective as the body tilt, but was a significant aid in reducing venous stasis. Contraction of thigh and leg muscles produced by percutaneous electrical stimulation was also helpful, but not as effective as voluntary contraction.

Application of compression bandages during elevation did not lessen venous stasis. Bandaging has been thought to divert flow into the deep veins.

Elevation of the foot of the table was thus felt to be markedly effective in reducing venous stasis, the most effective of all measures tested, and the simplest to use in operating or recovery rooms.

The Art of Administration

R.I.G. Brooks (Westminster Hospital, England), PHYSIOTHERAPY, 46:273-279, October 1960

While there are general rules governing the use of various techniques and practical methods and drills which lead to order, precision and a common understanding among the staff, the art of administration is to know which technique to apply or when to devise a new solution. One must assess accurately the nature of problems and relate solutions to the character of those concerned, being mindful of long-term effects and avoiding expediency. The art of administration is the art of handling human beings in relation to the purpose for which they are grouped so as to achieve efficiency in the present and a firm basis for efficiency in the future. Administrators are constantly tempted to avoid the moral issue on the grounds of efficiency, of not wishing to appear inflexible, and of maintaining good relations. The exercise of moral courage is not restricted to the great critical issues, but is a virtue to be practised in many small problems so that it will be firm enough for really serious trials.

The administrator constantly risks placing the easy before the difficult. He may be induced to accept another's assessment of priority, but he must discipline himself to judge with some initial reserve the nature of problems and ideas brought to him and to determine how important they are both in themselves and in relation to each other. After he has listened carefully and considered objectively, he should work out his judgment in co-operation with others involved. This lightens his burden and encourages others to see problems in relation to the whole organization, widening their own sense of responsibility. The object of discussion is to enable one to come to his own decision by means of the exchange of ideas with his staff. The administrator must be aware of the effect of prolonged deliberation. Those who never listen or decide are not administrators.

He must achieve balance between idea-stimulating and activity-moderating. Too much regulating leads to stagnation; too many new ideas to a feeling of restlessness. Proper use of human resources assures both inspiration and steadiness. The leader should lay down the general areas of responsibilities, leaving each subordinate free to work his own way. One may delegate a task and the responsibility for it, or hand over responsibility for a defined area of work which includes various tasks. How far delegation is to go is a matter of judgment and courage, of readiness to put confidence in others, and of willingness to risk their failing to discharge their delegated responsibility. The leader is responsible for training his subordinates with freedom to use their particular qualities and energies, implying delegating on those very occasions when the leader is tempted to work himself. The administrator must remain finally responsible for all the activities of the organization, but personal responsibility does not demand personal performance.

Administration is empirical and the art of its practice personal. The administrator should have a firm concept of aims and of likely means.

How he handles those means, both material and human, is essentially his personal expression of the art of administration.

Regeneration of Peripheral Nerves with Hyperinsulin Neuronopathy

E. H. Lambert (Physiology and Neurology Sections of the Mayo Clinic and Foundation, Rochester, Minnesota), D. W. Mulder and J. A. Bastron, NEUROLOGY, 10:851-854, September 1960

Hyperinsulin neuronopathy has been described as a syndrome of distal muscular atrophy and paresthesias associated with hyperinsulinism. It has been postulated that the pathophysiology of this syndrome involves both the anterior horn cells and the peripheral nerves, although the pathologic evidence for the latter lesion is not available. In a review of the histories of twenty patients with hyperinsulin neuronopathy associated with pancreatic adenoma, removal of the pancreatic adenoma resulted in the disappearance of the parasthesias and arrest of progression of the muscular atrophy. However, clear evidence of improvement in muscle strength occurred in only one patient. The rarity of significant recovery of muscle suggests that weakness and atrophy are the result of degeneration of anterior horn cells.

This communication describes the occurrence of recovery of muscle strength and muscle bulk after removal of pancreatic adenomas from a patient with hyperinsulin neuronopathy. The results of serial electrodiagnostic and electromyographic examinations are reported and suggest that recovery in this patient occurred by regeneration of peripheral nerves rather than by sprouting of previously undamaged axons such as might occur in diseases affecting the anterior horn cells.

The authors conclude that the high threshold, long latency component of the response to stimulation of the ulnar nerve after recovery from hyerinsulinism neuronopathy represents the response of immature, small diameter motor nerve fibers that have regenerated from previously damaged axons rather than by sprouting from undamaged axons. These observations supply physiological evidence for involvement of the peripheral nerves in this patient with hyperinsulin neuronopathy.

Ruptured Plantaris Tendon—An Easily Overlooked Entity

Harry Ledbetter, TEXAS J. MED., 56:738-739, September 1960

The plantaris muscle is a rudimentary muscle in man and serves only as an accessory to the gastrocnemius, aiding in extension of the ankle if the foot is free, or in flexion of the knee if the foot is fixed. Its only possible importance is that it can produce sudden disabling pain in the leg when it is ruptured.

The usual history of rupture of the plantaris muscle is that of immediate onset of pain in the calf muscle during sudden forced dorsiflexion of the ankle. This is followed by a painful limp, with increasing pain as the patient bears weight on the heel while walking. After two to three hours, there is usually swelling of the calf of the involved leg. After three to four days, discoloration on the skin extends along the lower half of the leg, usually on the medial side. The weakest point of the muscle is its belly, and it is at this point that rupture usually occurs. Maximal tenderness is usually in the upper half of the calf. The extent and duration of symptoms depend on the size of the hematoma which develops.

Treatment consists of elevation of the extremity, application of ice packs, and elastic pressure bandages to minimize hematoma formation. This is followed by limited weight bearing on crutches, continuation of pressure, physical therapy and administration of Veridase. Elevation of the shoe heel allows an earlier return to weight bearing. The usual healing period is approximately three weeks.

Two case histories are included.

Rehabilitation of Aged with Rheumatoid Arthritis

H. S. Robinson (Medical Director, British Columbia Division, Canadian Arthritis and Rheumatism Society, Vancouver), GERIATRICS, 15:637-643, September 1960

Little has been said about the disabled rheumatoid patient who is over 64 years of age.

There may be little reason to break down groups of rheumatic patients into age categories, since techniques of rehabilitation are similar, by and large, in all disabled groups. Nevertheless, older patients do have individual characteristics which may modify a treatment program. They frequently live alone. Multiple disease is frequently present. Concomitant heart disease and mental change may make rehabilitation of any degree impossible.

The ultimate goals may be different from those of younger groups. The psychological characteristics of this age group also affect the approach to treatment. It is surprising how many of these patients are able to learn and to manage effective activities if they are well motivated.

The failure in rehabilitation of the elderly rheumatic patient depends on various factors: motivation, presence or absence of concurrent illness, extent of physical deformities and capacity of the rehabilitation worker to recognize the residual physical capabilities, successful use of self-help devices, recurrence of active disease, adequate follow-up program, and availability of financial support to make help available to the economically impoverished chronic disease patient.

Stimulation Assistive Exercise in Hemiplegia

Harry T. Zankel (Veterans Administration Hospital, Durham, North Carolina), GERIATRICS, 15:616-622, September 1960

The author reported on the treatment of the hemiplegic upper extremity by a method of proprioceptive facilitation called stimulation assistive exercise (SAE) and the results of this treatment on twenty-seven patients.

This technique of neuromuscular re-education employs the use of intensive, repetitive sinusoidal stimulation (S) of paralyzed muscles assisted (A) by the patient's own exercise (E) effort; hence, the name, stimulation assistive exercise (SAE).

Electrical stimulation was given by placing one electrode over the deltoid or triceps muscles and the other over the wrist and finger extensor muscles. A sinusoidal current at the rate of ten to eleven stimuli per minute was used for one-half hour. With each stimulus, the patient was instructed to attempt to enhance the motion by a voluntary effort. Visual facilitation was provided by a pilot light which went on with each stimulus and remained on for the duration. Following this period, the patient exercised with an overhead pulley for half an hour.

The twenty-seven hemiplegic patients whose paralyzed upper extremities had shown little or no improvement were given SAE for variable periods. Range of motion of various joints was used as a gauge of improvement. On this basis the author felt the results were satisfactory or excellent in 74 per cent of the patients. The least responsive were those with flaccid paralysis or with a spastic paralysis associated with severe contractures.

The author felt the SAE routine should be started early and continued at home after the patient's discharge.

The Treatment of Postoperative Pulmonary Atelectasis with Intermittent Positive Pressure Breathing

Abraham Becker, Stuart Barak, Esmond Brown, and Maurice P. Meyers (Department of Internal Medicine and Surgery, Sinai Hospital, Detroit), SURG., GYNEC. OBSTET., 111:517-522, October 1960

Postoperative atelectases occurred in fifty-one of 100 patients after upper abdominal surgery. Diagnosis was made on the basis of chest roentgenograms taken in the erect position on the first and fifth postoperative days.

Routine intermittent positive pressure breathing on inspiration with bronchodilator and detergent aerosols did not prevent the occurrence of postoperative atelectasis nor accelerate its clearance in patients with a normal bronchial tree. This therapy is chiefly indicated preoperatively and posoperatively in patients with chronic bronchial disease.

Most investigators agree that the immediate cause of postoperative atelectasis is a bronchial obstruction due to secretions within the lumen. Air behind the obstructed bronchus is absorbed by the circulating blood and no air is replenished because of the block, producing an airless plate, segment, lobe, or lung, depending upon the site of obstruction.

In the postoperative period, prophylaxis depends chiefly on the encouragement of the patient to cough. Frequent turning of the patient from side to side and deep breathing exercises are also indicated.

Curative therapy of postoperative atelectasis consists chiefly of helping the patient to cough while he is in the lateral position. Tracheobronchial and finally bronchoscopic aspiration should be employed if the atelectasis fails to clear. In this series, atelectasis cleared with the routine postoperative care of encouragement to cough, turning from side to side, deep breathing, and early ambulation. "Most suggestions for the improvement of postoperative patients have demonstrated improvement in results, and the common denominator of each of these appears to be closer attention to the patient postoperatively".

A Local Health Department Employs a Physical Therapist

Elizabeth Gentry (Austin, Texas), TEXAS J. MED., 56:796-798, October 1960

With increasing community attention being given to persons with chronic disease, the contribution of the physical therapist to public health practice attains major importance.

By means of several case reports the author outlines the accomplishments of two physical therapists after five and four months of service, respectively, as follows: (1) A physical therapist can secure results easily and early; (2) A physical therapist is an important member of the community health team; (3) A physical therapist can help people even after years of neglect; (4) From an economic standpoint, the salary of a physical therapist is justified, but follow-up treatment is essential to maintain this advantage; (5) Physical therapy services are economical only when followed up.

To assure an adequate caseload for the physical therapist, the public health nurses and the State Department of Public Welfare were asked to select patients who might benefit by this service. Two physicians, the hospital physical therapist, and the therapist employed by the Public Health Department consulted with the intern-resident staff of a local hospital about the services available in an appeal for referrals. The source of referrals for 1959 were as follows: public health nurses, thirty-two; State Welfare Department, fifteen; and intern-resident staff, six. The physical therapist always obtained orders from the attending physician, which may result eventually in more direct referrals from other physicians.

During seven and a half months of 1959, fifty-three patients were served in 419 home visits; twenty-seven patients were seen in their own homes; and twenty-six patients were seen in nursing homes. Treatment was less successful in patients living in nursing homes than in those in private homes. Only patients who could not return to the hospital outpatient physical therapy department were visited in the home, thereby supplementing the services of the hospital.

Psychological Tests in Planning Therapy Goals

Lela A. Lorens (Lafayette Clinic, Detroit, Michigan), AMER. J. OCCUP. THER., 15:243-246, Sept.-Oct. 1960

Occupational therapy attitudes and goals with emotionally disturbed children are based on the acceptance of psychological test results as diagnostically significant, implemented by observation of the child relative to his behavior, performance, sociability and interests.

The four major diagnostic classifications are the immature, the neurotic, the psychotic, and the neurologically impaired child. The therapists' attitudes toward the immature child focus on acceptance of hostile and aggressive behavior. For the neurotic child, who is hyperactive, restless, fearful, clinging and self-condemning, warmth and acceptance are initial steps. The withdrawal of the psychotic child is a learned reaction to frustration. Treatment goals provide the opportunity for impulse release as well as gratification of his needs through directing his fantasy material into reality oriented activity, and firm consistent limits for ego control. Warmth and affection are important. For the neurologically impaired, an opportunity should be provided to accomplish at his own level without frustration.

Abstracters for June

We are indebted to the following Association members for the carefully prepared abstracts that appear in this issue:

Jean Cuthberson	M. Partridge
Joan Erback	Margaret Rood
Rita Getzel	Patricia Wakefield
G. Midgley	Nancy Watts

Virginia Wirtz

Book Reviews

Essentials of Human Anatomy, 2nd ed. *By Russell T. Woodburne, A.M., Ph.D., Professor of Anatomy, University of Michigan Medical School. Cloth, illus., 620 pp. New York: Oxford University Press, 1961. $12.50.*

This text is designed primarily for the use of medical students engaged in dissection. It is arranged on a regional basis rather than a systemic one. Descriptions are given from external to internal and from proximal to distal, following the usual course of the dissective process. Structures are described according to their positional reference in each region of the body.

This is an accurate text and well organized for its purpose. The new anatomical nomenclature adopted in 1955 in Paris is used consistently throughout, and several descriptive changes are to be noted. Most of these, while widely accepted in the laboratory, have not as yet found their way into the literature. Dr. Woodburne presents such facts as the existence of four palmar interossei muscles, a description not usually found in other books.

The illustrations are well placed and carefully selected. The excellence of these is perhaps the reason one regrets the absence of more color illustrations.

Two specific areas of study are included which give this text considerable value. There is a comprehensive section for each region concerned with surface anatomy as well as important facts of growth and development of specific areas and systems. The clinical significance of this is a particularly good point of this text.

In general, this book is well suited for its purpose. While not a text useful for quick factual reference, it is a clear accurate and productive guide to the process of learning human anatomy in the laboratory.

ELEANOR J. CARLIN
Assistant Director,
Division of Physical Therapy
School of Allied Medical Professions
University of Pennsylvania
Philadelphia, Pennsylvania

Man's Posture: Electromyographic Studies. *By J. Joseph, M.D., M.R.C.O.G., Reader in Anatomy, Guy's Hospital Medical School, London. Cloth, illus., 88 pp. Springfield, Illinois: Charles C. Thomas, 1960. $5.50.*

This book is a report of the author's electromyographic studies of the standing position. It begins with a discussion of the uniqueness of man's posture and a description of the posture used in the studies. There is a brief review of the literature on center of gravity, line of weight and postural sway, and a presentation of opposing opinions on how stability is maintained in standing at ease.

Chapter II gives the basic concepts in electromyography: the ionic theory of the action potential and the form and size of single fiber and motor unit potentials. Literature is cited on the number of motor units in certain muscles, the scatter of fibers within one unit, and the overlapping of motor units. The difficulties in relating frequency and amplitude of potentials to the force of contraction and the effect of fatigue are discussed. This chapter may be of use for one who is a beginning student of electromyography, because it presents not only the basic facts but also points out the common errors in electromyogram interpretation. Limitations and advantages of needle and surface electrodes are discussed and the author's choice of surface electrodes in these investigations is explained. His method of electrode attachment, preparation of the skin, and the criteria used in electrode placement are given, and the characteristics of the electromyograph used in the studies are described.

In a chapter on relaxed muscle, Dr. Jacob gives a brief history of the changing concept of muscle tone and states his reasons for believing that the absence of electrical activity in relaxed muscle is not due to failure of present equipment to pick up minute potentials. The author defines tone not as a state of tension found in all innervated muscles but as a response to stretch under certain conditions.

The remaining chapters report the findings in the electromyographic studies of the back, hip, thigh and leg muscles in the standing at ease position. Each chapter begins with consideration of the line of weight in relation to the joint axis and the passive forces resisting movement. The author's results are compared with those of others.

The final chapter presents conclusions. These are, briefly, that the standing at ease position is maintained by the continuous and somewhat variable contraction of the calf muscles, especially soleus, and by the appropriate ligaments of the knee and hip joints and some part of the posterior vertebral muscles; and that the absence of electromyographic activity in many postural muscles during easy standing makes a re-defining of tone necessary.

The book will be of interest to anyone interested in kinesiology and to those working in electromyography. The beginner in this area, particularly, will appreciate the chapter on apparatus and methods. The bibliography is large and diverse and contains references as recent as 1958.

MARGARET BRYCE
Assistant Professor
Department of Physical Therapy
University of Southern California
Los Angeles, California

Postural Fitness: Significance and Variances. *By Charles LeRoy Lowman, M.D., Sc.D., F.A.C.S. Chief of Staff, Orthopedic Hospital, Emeritus; Director, School of Physical Therapy, University of Southern California; Director of Education, Orthopedic Hospital, Los Angeles; and Carl Haven Young, Ed.D., C.C.T., F.A.A.P.M.R., Professor of Physical Education, University of California, Los Angeles. Cloth, illus., 341 pp. Philadelphia: Lea & Febiger, 1960. $7.50.*

Postural fitness, if this term is synonymous with physical fitness, has become everyone's business. In the preface the authors define pos-

tural fitness as ". . . that fitness which each individual should seek to achieve, whereby he may assume and maintain proper segmental relationship in all movements of the body." The book "has been prepared to provide, with a modicum of scientific details, practical guidelines pertaining to: (1) prevention of potential growth faults, (2) discovery of divergencies in structure and function among people of all ages, (3) significance in the relationship of proper segmental alignment to the systems of the body, and (4) various procedures for the development of necessary musculature."

Dr. Lowman is eminently qualified to discuss postural fitness. Skeletal alignment and postural faults have merited his attention through the years. The bibliography includes an article by Dr. Lowman entitled "Effects of Faulty Skeletal Alignment upon the Eyes," published in the *American Journal of Orthopedic Surgery* in 1918. His writings since 1918 evidence his interest in corrective physical education. With Dr. Young as co-author, Dr. Lowman has produced a book which is directed primarily to physical educators and which has the requirements of a text and a manual.

The scope of this book is broad. It ranges from a "broadening concept for opportunity and service" to specific exercises for specific conditions such as asthma and cardiac cases. The subject matter is treated in line with the "modicum of scientific details" which is the limiting factor in the usefulness of this book to physical therapists.

Ten chapters, each with reference lists, and a bibliography of twelve pages comprise a wealth of reading material although the bibliography seems to be a compilation of the various reference lists. There are sixty-two illustrations which may be an inadequate number for readers who are not familiar with the content of the book.

In looking again at Dr. Lowman's *Technique of Underwater Gymnastics* published in 1937, the terminology used is familiar to physical therapists. In this book there are certain changes in terminology which may be confusing to the physical therapist. The "Contents" includes "divergencies" and "dissimilarities" in the tabulation of postural deformities and faults. In the index, however, these "divergencies" and "dissimilarities" appear under "deviations," which makes the index more meaningful to physical therapists than is the table of contents. The variations in terminology are understandable because *Postural Fitness* has a physical educator as co-author, whereas physical therapists served as co-authors of *Technique of Underwater Gymnastics.*

DOROTHY E. VOSS
Editor-in-Chief
Physical Therapy Review

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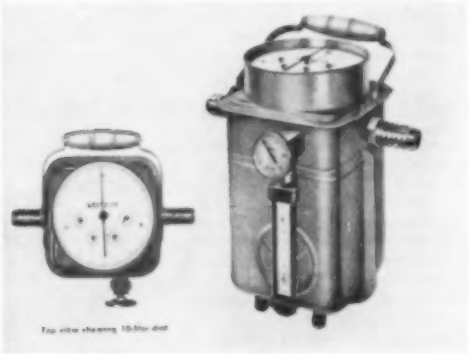
60. Respiratory and Test Meter

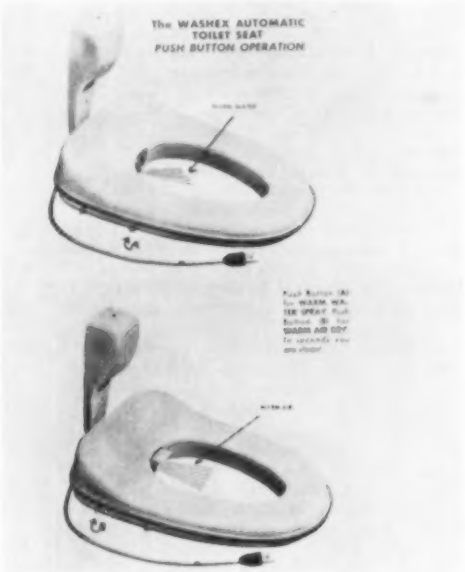


A Portable Respiratory and Test Meter is useful for a variety of sensitive test measurements on air and inert gases. Operating with a pressure differential of only a few tenths of an inch of water, its rated capacity is 45 liters per minute of air at ½ inch water column differential. Bulletin 502 provides details. American Meter Company.

61. Electronic Muscle

The Electronic Muscle, designed for disabled and handicapped persons, is a battery-operated unit weighing less than eight ounces. The unit can be worn either on a waist belt or strapped to the upper leg. Used in place of a below-the-knee brace, it provides electrical impulses to muscles in areas where nerve action has been impaired. Theratron Corporation.

62. Washex Toilet Seat



Washex automatically operated by push button or footswitch gently cleanses the rectal and vaginal areas with a warm water spray. Drying with warm air takes only seconds and eliminates perineal and hemorrhoid irritations, cross-infection and problems resulting from the use of toilet tissue. The footswitch-operated model, for upper arm amputees, quadriplegics and the handicapped is recommended for postoperative and obstetrical care, in proctology and geriatrics, and with mentally incompetent patients. Installed without special tools, the temperature, air and water spray pressure are automatically controlled. Water and air are heated when seat is in use. Rehabilitation Products.

Positions Available

Physical therapy practice acts have been enacted in 36 states. A listing of State Board Examinations appears in the advertising pages.

NEW ENGLAND

CHALLENGING POSITION—for mature qualified physical therapy consultant who is a qualified public health nurse. Responsibilities include a small case load, teaching and supervising staff nurses in appropriate rehabilitation measures and in general public health nursing. Liberal personnel policies. Salary open. Apply to Miss Anna C. Gring, Executive Director, Visiting Nurse Association of Bridgeport, 87 Washington Avenue, Bridgeport, Connecticut.

IMMEDIATE OPENING—Registered Physical Therapist for a general hospital of 207 beds. Paid vacation and sick leave, 40-hour week, 7 holidays. The Charlotte Hungerford Hospital, Torrington, Conn.

CONNECTICUT—Small community hospital in hills of north-central Connecticut needs aggressive registered therapist to plan and carry out program. Interested medical staff includes recognized expert in ultransonics. Housing available. Write Administrator, The Johnson Memorial Hospital, Stafford Springs, Connecticut.

PHYSICAL THERAPIST NEEDED—(Female) September opening, to work in an outpatient clinic, serving faculty, students, employees. At least two years of clinical experience required. New building, 40-hour week, 4-weeks vacation, excellent Blue Cross and Blue Shield Plan, Employees' Clinic and many other benefits. Salary commensurate with experience. Apply to Miss Judith W. Hill, Employment Supervisor, Personnel Office, Harvard University, 1352 Massachusetts Avenue, Cambridge, Massachsetts.

REHABILITATION and general medical hospital desires services of additional physical therapists. Near New Haven Hospital, close to Hartford and Waterbury. Fully equipped air-conditioned Physical Therapy Department. Thomas F. Hines, M.D., Associate Clinical Professor of Physical Medicine, Yale University & Director of Rehabilitation Services, Gaylord Hospital. Physical Therapist-in-Charge: Miss Charlotte E. Kinney, B.S., R.P.T. Salary open. Personal interview requested. Address: Chief Physical Therapist, Box 440, Wallingford, Conn.

WANTED—Two staff physical therapists for a rapidly expanding Rehabilitation Department of 200-bed Chronic Disease Hospital, both inpatients and outpatients. Salary commensurate with experience. Apply: Miss Ruth Olson, Superintendent, New Britain Memorial Hospital, New Britain, Connecticut.

STAFF PHYSICAL THERAPIST—General hospital, 300 beds. Excellent opportunity for new graduate. Five-day week. Apply Personnel Department, The Memorial Hospital, Worcester, Massachusetts.

MIDDLE ATLANTIC

DIRECTOR OF PHYSICAL THERAPY—This is an outstanding opportunity for therapist who has already or is now ready for supervising a large new ideal department in a rehabilitation hospital treating children and adults. Salary is commensurate with experience and training. Further information and attractive brochure furnished on request. Apply to Mr. Neil T. LaForest, Sunnyview Orthopaedic and Rehabilitation Center, Inc., 1270 Belmont Avenue, Schenectady 8, New York.

STAFF THERAPIST—for a new and expanding department in a 350-bed, fully accredited hospital. Good salary and personnel policies, no weekends, teaching optional. Write: Personnel Director, St. Vincent Hospital, Erie, Pa.

THE HOSPITAL FOR SPECIAL SURGERY (New York City)—Several openings for Staff Therapists, one in Cerebral Palsy Dept; the others, orthopaedics and rheumatic disease. In 194-bed orthopaedic hospital, inpatients and outpatients. Large teaching center. New building, air-conditioned apartment available, 5-day week, 4-week vacation, 10 paid holidays; liberal benefits. Write: 535 East 70 St., New York 21, N. Y.

QUALIFIED PHYSICAL THERAPIST—Recent graduate accepted. Non-sectarian residential center providing intensive treatment for 40 C.P. children. Salary open, good personnel policies. August vacation, Christmas holidays. Apply: Director, Home of the Merciful Saviour, 4400 Baltimore Avenue, Philadelphia 4, Pa.

PHYSICAL THERAPIST—Comprehensive rehabilitation center of medical school and teaching hospital. Program includes physical, occupational, speech-hearing, psychological, prevocational, vocational and social services. Excellent starting salary. Employee benefits include free University tuition. Write Medical Director, Rehabilitation Center, University Hospital, 150 Marshall Street, Syracuse 10, New York.

SENIOR THERAPIST AND STAFF THERAPISTS—Modern City Hospital, 20 minutes from Times Square. Extensive teaching program headed by Dr. Lawrence I. Kaplan, Professor, N.Y.U. Full medical staff, research encouraged. Salary: $4,785 per annum with yearly increments to $5,716 for staff; $5,327 to and including $6,820 with annual increments of $240 for Senior. One month paid vacation, many liberal benefis. Contact Jerome R. Schattner, Chief Physical Therapist, City Hospital at Elmhurst, 79-01 Broadway, Elmhurst 73, New York. Telephone DEfender 5-3200, Extension 241.

PHYSICAL THERAPIST—571-bed general hospital in suburban area; newly equipped department has 4 therapists and 3 aides. In- and outpatients for Orthopedic, Neurology, Internal Medicine, Neurosurgery, and Rehabilitation work. Salary open; range with increments; excellent fringe benefits. Write The Reading Hospital, Personnel Dept., West Reading, Pa.

STAFF THERAPISTS—N.Y.U. Medical Center affiliated hospital. Diversified experience offered: General Physical Therapy, Rehabilitation, and Respirator Sections. $4,680-5,580 with annual increments, Liberal vacation, sick leave policy. Write Department PM&R, Goldwater Memorial Hospital, Welfare Island, New York 17, N.Y.

STAFF THERAPISTS—For 523-bed general hospital in Manattan. Excellent salary range and benefits. Applicants must be eligible for licensure in N. Y. State. Write E. J. Megerian, Asst. Dir., Personnel, St. Luke's Hospital, 421 W. 113 St., New York, N. Y.

PHYSICAL THERAPIST—FIELD SERVICE, to administer physical therapy treatments in the home or clinics. Suburban location convenient to N. Y. C. Liberal benefits, 35-hour week; car available for business use. Salary $4,790-$5,750. Bachelor's degree in physical therapy and eligibility for licensure in N. Y. State. Contact Miss Doris Krumlauf, Westchester Co. Dept. of Health, County Office Bldg., White Plains, N. Y.

PHYSICAL THERAPIST—Licensed for 401-bed general teaching hospital and associated Cerebral Palsy Clinic. Position open in early fall. Convenient to all educational, cultural and recreational resources. Good salary, generous vacation and sick leave. Expanding department. Apply Personnel, Long Island College Hospital, 340 Henry Street, Brooklyn, N. Y.

WANTED IMMEDIATELY—Two physical therapists for outpatient cerebral palsy clinic school. APTA, AMA approved graduate starting salary $4,500-$5,000 dependent upon experience. Liberal personnel policy. Contact William H. Brooks, Director, Essex Co. C.P. Center, 7 Sanford Avenue, Belleville, N.J., (PL 1-0200).

STAFF PHYSICAL THERAPIST—Cambridge, New York, Mary McClellan Hospital. Must be graduate of New York approved School. New department, fully equipped and treating a wide range of disabilities. Beginning salary $4,800. Female applicant may live in Nurses Residence. Hospital is in center of skiing, fishing and swimming area. Close to Summer Theatre and Art Centers. Applicants should send inquiries to Miss Ruth J. Kelley, Chief Physical Therapist, Mary McClellan Hospital, Cambridge, New York.

PHYSICAL THERAPIST—For dynamic kindergarten nursery and outpatient program for physically handicapped children. Total team approach. Salary dependent upon experience, 40-hour week. Reply: MCAPHC, Box 646, Norristown, Pa.

SOUTH ATLANTIC

QUALIFIED PHYSICAL THERAPIST (two) for outpatient cerebral palsy treatment center. Starting salary $4550 per year. Two months vacation, liberal sick leave benefits. Liberal personnel policy. Contact Robert Schlitt, Director, Peninsula Cerebral Palsy Training Center, 901 24th Street, Newport News, Va.

WANTED IMMEDIATELY: Two (2) Staff Physical Therapists, expanding department of an orthopaedic clinic. Department under direction of a physiatrist. Vacation, sick leave, holidays. Inquire: Arthur E. White, M.D., Anderson Clinic, South 25th Street & Army-Navy Drive, Arlington, Va.

STAFF PHYSICAL THERAPIST for expanding and progressive rehabilitation program in Baltimore and Hagerstown, Maryland. Salary: Staff—$4500.00 with annual increments, vacation, and sick leave. New and well equipped clinics, 40-hour week, inpatients only. Apply Dr. Florence Mahoney, Director Rehabilitation Medicine, or Miss Dorothea Barthel, Montebello Hospital, 2201 Argonne Drive, Baltimore 18, Maryland.

OPPORTUNITY FOR A STAFF PHYSICAL THERAPIST—in a 600-bed Eastern Medical Center. Will function under the supervision of a physiatrist and receive comprehensive experience involving a wide variety of cases. Medical Center located in close proximity to mountains, coast, and large cities. Contact Personnel Office, University of Virginia, 1416 West Main Street, Charlottesville, Va.

ASSISTANT CHIEF PHYSICAL THERAPIST—for well equipped department in a 500-bed modern general hospital. Forty hour week; paid vacation; paid sick leave; Salary open. Hospital is Regional Medical Center. Apply: Personnel Director, The Macon Hospital, Macon, Ga.

PHYSICAL THERAPIST—New 300-bed Atlanta hospital needs additional therapist: 40 hour week, paid vacation, laundry of uniforms, sick leave, hospitalization and group life insurance. Please write giving full information on background, experience, salary desired, to Chris. J. McLaughlin, M.D., 1010 Medical Arts Building, Atlanta 8, Ga.

STAFF THERAPISTS: For large Physical Medicine Department in 1,200-bed general hospital with three medical schools affiliated. Salary $4,345-$5,355 depending on experience. Policy of rotation through various sections of department, including 29 bed rehabilitation ward. D. C. Civil Service appointment and benefits, 40-hour week, physiatrist in charge. Apply to: Dr. Josephine J. Buchanan, Chief, Dept. of Physical Medicine, D. C. General Hospital, Washington 3, D. C.

REGISTERED STAFF PHYSICAL THERAPISTS—1,400-bed hospital with well equipped department under direction of a physiatrist. Paid vacation, 40 hour week, and sick leave. Starting salary $4,128 with annual increases. Contact Director, Physical Medicine Department, Medical College of Virginia, Richmond, Virginia.

PHYSICAL THERAPIST (Assistant Chief)—Male or Female, 300-bed general hospital with complete PM&R service, starting salary $5,355.00 per year, liberal sick leave, vacation, life insurance and retirement benefits. Write: Chief, Personnel Division, VA Hospital, Wilmington 5, Delaware.

REGISTERED PHYSICAL THERAPIST — Cerebral palsy treatment center. Salary dependent on experience, 1-month vacation, insurance coverage. Inquire: Mrs. M. F. Chapmon. Ex. Dir. UCP of Tampa, 121 Columbia Dr., Tampa 6, Florida.

STAFF PHYSICAL THERAPIST

New 300-bed general hospital. Well equipped, air conditioned department. Eight holidays, 2-weeks vacation, liberal sick benefits. New graduate acceptable. Apply Personnel Director, Lakeland General Hospital, Lakeland, Florida.

PHYSICAL THERAPIST—One immediately, another January 1962 in air-conditioned cerebral palsy school. Five-day week, public school holidays, 1 month summer vacation, sick leave. Salary open. Contact Mrs. A. M. Inman, Executive Director, Greensboro Cerebral Palsy School, 1601 Gatewood Ave., Greensboro, N. C.

TIRED OF SNOW? Opening September 1, 1961 for Physical Therapist in a general outpatient community treatment program including physical therapy, occupational therapy and speech therapy. Affiliated with the National Society for Crippled Children and Adults, Inc. Five day week, liberal vacation and sick leave, Blue Cross Hospitalization Plan, social security. Salary open. Apply: Mrs. David L. Black, Volunteer Director, Junior Service League Orthopedic Center, 1219 Dunn Avenue, Daytona Beach, Florida.

Interviews at APTA conference for PT's with one or more years experience, active physical medicine program, ten hospital network, see Miss Madge Ashton, Representative, Miners Memorial Hospital Association or write Box No. 61, Williamson, West Virginia.

THREE STAFF PHYSICAL THERAPISTS—for progressive program in 450-bed modern general hospital located in large leading Federal mental hospital which is nationally recognized teaching center. Applicants must meet standards established by AMA at time of graduation or APTA if graduated prior to 1936. One year professional experience required for starting salary of $5,355. Positions in career Civil Service. Liberal vacation and sick leave, life and health insurance and retirement benefits. Hospital situated on beautiful reservation near U.S. Capitol. Opportunity for advanced education at nearby universities. Write Personnel Office, Saint Elizabeths Hospital, Washington 20, D.C.

EAST NORTH CENTRAL

PHYSICAL THERAPIST—Physical therapy department of established comprehensive outpatient rehabilitation center treating children and adults with all types of physical disabilities. Will work directly under full time Medical Director (Physiatrist) and Supervisor of Physical Therapy. Excellent personnel policies and benefits; new building. New graduate considered. Salary open. Apply to Robert A. Silvanik, Administrator, Rehabilitation Center of Summit County Inc., 326 Locust Street, Akron 2, Ohio.

PHYSICAL THERAPIST—for a four year old C. P. Center; starting salary $5000-$5500, up, plus increments, depending on training and experience. Prefer special training and/or experience in C.P.; if not C.P. trained or experienced, opportunity available for advanced training in C. P. with pay. Apply Mrs. S. L. Zieve, Coordinator, Cerebral Palsy Center, P.O. Box 294, Elyria, Ohio.

REGISTERED PHYSICAL THERAPIST for well-equipped department in 425-bed general hospital, located in pleasant, residential, lake-shore suburb of Chicago. Good salary, 40-hour week, progressive personnel policies. Apply: Personnel Office, Evanston Hospital, 2650 Ridge Avenue, Evanston, Ill.

PHYSICAL THERAPIST for general hospital work. Completely new facilities, four therapists, University affiliation. Complete program of benefits including three weeks vacation to start. New 100-bed rehabilitation-oriented facility being developed for chronically ill. Write: Mark Slen, Assistant Administrator, Parkview Memorial Hospital, Fort Wayne, Ind.

STAFF THERAPIST—(Little Company of Mary Hospital, Evergreen Park, Illinois). New department, large hospital Chicago suburb. Increasing rehabilitation program. Write Personnel Director, 2800 W. 95th St., Evergreen Park, Ill.

Physical Therapist for Rehabilitation Center—Presents challenge of an expanding program. Work with and provide consultation to community health groups. 40 hr., 5 day wk., 3 wk. vacation. Salary open, based on experience. Write Dir. Curative Workshop, 342 S. Webster, Green Bay, Wis.

WANTED—Registered Physical Therapist, 455-bed general hospital adjacent to college campus. Inpatient and outpatient daily load approximately 50. Fringe benefits: vacation, sick pay, health insurance, retirement plan, Social Security, and annual physical. Salary open. Apply: Personnel Office, Ball Memorial Hospital, Muncie, Ind.

STAFF PHYSICAL THERAPIST—registered, in 300-bed general hospital. Paid vacation and holidays; sick leave accumulative to 30 days. Supervised by a medical physiatrist, department well equipped. Salary open. Apply: McLaren General Hospital, 401 Ballenger Highway, Flint 2, Mich.

WANTED—Staff Physical therapist, male or female for a progressive 408-bed general and teaching hospital. Salary is open and will be commensurate with past experience. Paid vacations, paid holidays, 12 paid sick days and partial payment of Blue Cross. Hospital is located between beautiful residential area and new modern college and cultural center. Excellent recreation areas near by. Write to: Personnel, St. Joseph Hospital, 302 Kensington Ave., Flint, Michigan.

IMMEDIATE OPENINGS—for Physical Therapist at supervisory levels. Salary open with merit increases, 3 week vacation. 2 week sick leave, 6 holidays. Clinics supervised by two Board physiatrists. Contact Judith Nelson, RPT, Coordinator of Services, 300 E. War Memorial Drive, Peoria, Illinois.

WANTED: STAFF PHYSICAL THERAPIST—Female, graduation from approved school required. General hospital, 471-beds. Major expansion program in progress with new equipment and quarters completed for Physical Therapy Department. Salary range $4,200 to $4,800. Forty hour work week plus liberal fringe benefits. Apply Personnel Director, Butterworth Hospital, Grand Rapids 3, Michigan.

IMMEDIATE OPENING—Well equipped Physical Medicine Department. Large general hospital. Varied case load. All age levels. General medical and orthopedic disabilities. Location midwest. Staff of four therapists. Salary open. Address replies to Don A. McGrath, Personnel Director, St. John's Hospital, Springfield, Ill.

STAFF PHYSICAL THERAPIST — Beginning salary $4,500 per year, higher with experience. Forty-hour week, vacation, holidays, sick leave and insurance plans available. Should be graduate of APTA approved course in physical therapy and hold membership in APTA and/or Registry. Duties cover all phases of physical therapy with some supervision and teaching of nursing students. Contact Alfred A. Washington, R.P.T., Provident Hospital and Training School, 426 East 51st Street, Chicago 15, Illinois.

STAFF PHYSICAL THERAPISTS—Salary range $4,800-$5,600. Starting salary based on experience. Merit increases, 40-hour week, 3-weeks vacation, holidays, sick leave, health and life insurance and retirements plans available. Affiliated with Wayne State University Medical School and developing P.T. School. Comprehensive rehabilitation program for inpatients and outpatients and P.T. for 650-bed general hospital. Graduates of approved schools of P.T. and should hold membership in APTA and/or Registry. Contact Mr. John C. Bay, Associate Director, Rehabilitation Institute, Inc, 261 Brady, Detroit 1, Michigan.

PHYSICAL THERAPIST—202-bed modern home for aged rehabilitation. Physical therapy department consists of registered physical therapist plus two aides working in newly and fully equipped department which works closely with occupational therapy department and medical services. Therapist is under direct supervision of staff orthopedic surgeon. Excellent salary range, commensurate with experience, retirement plan, other benefits. Apply: Howard Bram, Jewish Orthodox Home for Aged, 736 Lakeview Road, Cleveland 8, Ohio.

PHYSICAL THERAPIST—New position. Conduct Community Homebound Therapy Program in conjunction with the Visiting Nurse Association. Program is part of physical therapy services of established comprehensive Rehabilitation Center. Work as staff member and under supervision of Medical Director (Physiatrist) of the Rehabilitation Center. Excellent personnel policies. Starting salary: $5,100 to $5,300. Apply: Robert A. Silvanik, Administrator, Rehabilitation Center, 326 Locust Street, Akron 2, Ohio.

STAFF POSITION FOR REGISTERED PHYSICAL THERAPIST—Immediate vacancy in this expanding, modern 313-bed general hospital; 5-day, 40-hour week, paid vacation, sick leave, and hospital insurance as well as other liberal fringe benefits. Salary open depending upon qualifications and past experience. Apply: Personnel Director, Barberton Citizens Hospital, Barberton, Ohio.

WANTED AT ONCE—Two physical therapists (Male or Female), full or part time, for well equipped Easter Seal treatment center on University campus. Salary open. Assistance given by one aide. Paid vacation. 5-day week, holidays, and sick leave. Apply: Fren Jansen, Jr., RPT, DeKalb Co. Therapy Center, Northern Illinois University, DeKalb, Ill.

WANTED—Trained and experienced physical therapist to assist in the physical therapy department of a 300-bed hospital. Salary open, depending on experience. Liberal personnel policies. Address: Hospital Administrator, St. Anthony Hospital, Terre Haute, Indiana.

STAFF PHYSICAL THERAPIST—For 310-bed acute general hospital. Forty hour week, 3 weeks vacation, insurance available. Salary commensurate with experience with increments, and new graduate acceptable. Minimum starting salary $5,000. Modern, well equipped air-conditioned facilities. Write: Charles G. King, Chief Physical Therapist, Bronson Methodist Hospital, Kalamazoo, Michigan.

PHYSICAL THERAPY POSITIONS available in Institute Departments located in three Peoria hospitals. Excellent education opportunities, both clinical and didactic. Three weeks vacation per year, sick leave, insurance benefits, 6½ holidays per year. Complete physical medicine and rehabilitation program under supervision of physiatrist. Progressive salary scale commensurate with experience and meritorious service. Apply Medical Director, Institute of Physical Medicine and Rehabilitation, 619 N.E. Glen Oak Avenue, Peoria, Ill.

REGISTERED OR LICENSED—physical therapist with special training and/or experience with cerebral palsied children to conduct established mobile unit service in Ohio. Occupational therapist also on service. Orthopedic medical direction. Station wagon and travel expenses provided. Forty hour week; social security; three week vacation plus 8 holidays, ten days annual sick leave and five days annual educational leave with salary; annual increments. Salary up to $6000 for a well qualified therapist. Apply Miss Grace Roberts, Cerebral Palsy Program Director, Ohio Elks Association, 580 E. Town St., Columbus, Ohio.

COMING TO CHICAGO IN JULY? Plan to visit the fastest growing Medical Center and inquire about the many opportunities at the University of Illinois Research and Educational Hospitals. Have a specialized experience with the multiple handicapped child or the respiratory polio undergoing reconstructive surgery or simply enjoy a widely diversified program which would include the amputee from the infant to the aged, a wide variety of collagen diseases, pre- and postoperative breathing programs, pool therapy, and electrodiagnosis as well as the large general orthopedic, neurological, medical and surgical case loads. Time for research. For further information on above opportunities, contact Dept. of Physical Medicine and Rehabilitation, University of Illinois Research and Educational Hospitals, 840 South Wood Street, Chicago 12, Ill.

EAST SOUTH CENTRAL

PHYSICAL THERAPIST—for department in 65-bed JCAH Hospital located on college campus, department established in Jan. 1960, all new equipment—very complete. Contact Administrator, Berea College Hospital, Berea, Kentucky.

STAFF PHYSICAL THERAPIST—For 313-bed private voluntary hospital. Excellent growth opportunity for recent graduate 40-hour week, salary open. Liberal employee benefits. Write: Personnel Director, Norton Memorial Infirmary, Louisville, Kentucky.

REGISTERED PHYSICAL THERAPISTS — Immediately, for cerebral palsy treatment center. Five day week, holidays, sick leave and month vacation. Salary open. Contact Director, United Cerebral Palsy of Central Mississippi, 519 Mississippi Street, (FL 2-9866) Jackson Mississippi.

WEST NORTH CENTRAL

IMMEDIATE OPENING—For registered physical therapist for a Crippled Children's Nursery School (ages 2-7 years). Five-days a week, 12 months a year. Further information upon request. Crippled Children's Nursery School, 3914 Washington, K.C. Mo. Mrs. Faxon G. House, Director.

WEST SOUTH CENTRAL

FULL TIME REGISTERED PHYSICAL THERAPIST —eventually to head department for 180-bed private general hospital, located on top of a modern medical professional building. Salary dependent on experience. Paid vacation, sick leave and other benefits. Ideal working and living conditions in beautiful San Antonio. Apply J. F. Morrison, Administrator, Nix Memorial Hospital, San Antonio, Texas.

WANTED IMMEDIATELY—Physical Therapist, staff position in crippled children's hospital in resort city on Texas Gulf Coast treating primarily cerebral palsy and polio with a few adult patients. Starting salary is $425; 37½ hour working week, 6 paid holidays, 12 day annual sick leave paid, 2 week vacation with pay after one year, noon meal and laundering of uniforms gratis. Contact Administrator, Ada Wilson Hospital of Physical Medicine and Rehabilitation, 1316 Third Street, Corpus Christi, Texas.

STAFF PHYSICAL THERAPIST—Wanted for rehabilitation center of all age levels; treating neuromuscular and musculoskeletal disorders. Excellent facilities, therapeutic indoor and outdoor pools. Clinical Training Center gives opportunity for teaching and supervision. Medical supervision by American Board Physiatrist. Attractive salary commensurate with experience; 5-day week; paid vacation. Laundry furnished. Write: Miss Ozella Scruggs, Chief, Physical Therapy, Texas Rehabilitation Center, Gonzales, Texas.

IMMEDIATE OPENING FEMALE PHYSICAL THERAPIST—For 42-bed Rehabilitation Hospital, treating children. Good working conditions, liberal benefits. Situated in Palmetto State Park. Write Administrator, Texas Elks Crippled Children's Hospital Drawer 550 Luling, Texas.

IMMEDIATE POSITION AVAILABLE—Registered Staff Therapist for 300-bed general hospital; sick leave, 2 weeks paid vacation, 40-hour week, starting salary $400 to $475 per; group participating Blue Cross-Blue Shield, social security. Progressive, new department with staff of four therapists, wide variety of cases. Baptist Hospital, Beaumont, Texas.

OPENING FOR EXPERIENCED REGISTERED PHYSICAL THERAPIST—(Female, Sept. 15th) In private Orthopedic Clinic. Salary $450 per month plus yearly bonus. 35-hour week. Two weeks paid vacation. Contact Graybill-Wilson Orthopedic Clinic, 1202 Arlington, Lawton, Okla.

MOUNTAIN STATES

STAFF PHYSICAL THERAPIST—Eventually to head department for expanding 325-bed hospital in sunny Tucson. Liberal personnel policies, 5-day week, salary dependent on experience. Apply: Margaret M. Reed, R.P.T., Physical Therapy Dept., Tucson Medical Center, Beverly and Grant, Tucson, Arizona.

QUALIFIED MALE THERAPIST—Rehabilitation center in JCAH general hospital active outpatient department. Compenent supervision by experienced physical therapist and medical staff. Salary ranges $4,200 to $4,800 with liberal fringe benefits, insurance and retirement plan. Mountain location, mild climate, vast recreation area. Write: Nora Staael, RPT, Northern Pacific Beneficial Association Hospital, Missoula, Montana.

IMMEDIATE OPENING—Female therapist. New 350-bed general hospital. Ideal college city close to mountains. Starting salary $335, liberal fringe benefits, available housing. Excellent opportunity for recent graduate. George Stout, Asst. Admin., Weld Co. General Hospital, 16th St. at 17th Ave., Greeley, Colorado.

IMMEDIATE OPENING—Two staff physical therapists in an expanding department under a physiatrist. Vacation, sick leave, holidays. Inquire: Freeman P. Fountain, M.D., Director, Department of Physical Medicine & Rehabilitation, Lovelace Clinic, 4800 Gibson Blvd., S.E., Albuquerque, New Mexico.

PACIFIC

SAN DIEGO COUNTY
CRIPPLED CHILDREN'S SERVICES

Graduates—Approved schools for Physical Therapy. Positions open in special schools for handicapped children. Starting salary $507; liberal employee benefits. Temporary appointment pending California registration. Write Dept. Civil Service and Personnel, Rm. 403, Civic Center, San Diego, Calif.

REGISTERED PHYSICAL THERAPIST—(man or woman) for 115-bed general hospital. Immediate opening; 5-day week, paid vacation, sick leave, 6 paid holidays. Salary dependent on experience. Must be eligible for California registration. Located resort coast village overlooking Pacific Ocean. Apply Personnel Manager, Scripps Memorial Hospital, LaJolla, California.

PHYSICAL THERAPIST—Cerebral Palsy Program operated by the Santa Clara County Health Department in local school for physically handicapped children. Salary: $478-581. Paid vacation, sick leave, retirement system and group health insurance plan. Apply to Mr. Robert Reiman, Supervising Cerebral Palsy Therapist, 2220 Moorpark Avenue, San Jose 28, California.

PHYSICAL THERAPIST I

Opening in large general hospital; $413-499 per month (recommended salary: $454-550); good personnel policies; retirement and O.A.S.I.; holidays; vacation and sick leave benefits; must be registered or eligible. Apply San Joaquin County Personnel Director, Room 530, Courthouse, Stockton 3, California.

STAFF PHYSICAL THERAPIST—For 400-bed general hospital. California registration or eligible. Salary $401-498. Paid vacation 3 weeks, paid sick leave 3 weeks, 11 or 12 paid holidays per year, and an optional health insurance plan. Contact Personnel Office, Monterey County Hospital, P.O. Box 1611, Salinas, California.

GRADUATES OF APPROVED SCHOOLS FOR PHYSICAL THERAPISTS: You may now practice under professional supervision in this State pending registration with the California Board of Medical Examiners. Positions open in State Hospitals, the Veterans Home, and special schools for handicapped children. Starting salary $458, higher in some locations; liberal employee benefits; promotional opportunities. Streamlined civil service examinations twice a month in San Francisco and Los Angeles, and on request in other states near candidate's residence. Write: State Personnel Board, 801 Capitol Avenue, PT 71, Sacramento 14, Calif.

WORK IN SOUTHERN CALIFORNIA—Physical therapists needed to staff new Rehabilitation Service at Rancho Los Amigos Hosp. All aspects of rehabilitation of all age levels including post-acute and convalescent care of respirator patients, general medical, and orthopedic disabilities and all aspects of bracing and prosthetics. Inservice training program under direction of physical therapy instructor. Five-day 40-hr. week, holidays, sick leave, vacation privileges, retirement benefits with Civil Service rights. New building and most modern equipment available. Quarters available, laundry furnished. Good beginning salary, annual increases. Write Chief Physical Therapist, Rancho Los Amigos Hospital, Downey, Calif.

CHIEF PHYSICAL THERAPIST—For 450-bed general hospital. Salary $425, two years minimum experience 40 hour, excellent employee perquisites. Close to mountains and ocean. Contact Employment Recruiter, Good Samaritan Hospital, Portland 10, Oregon.

Classified WANT-ADS

Rates

$3.00 for the first line
1.00 each additional line

Typewrite your advertisement carefully and count 50 characters and spaces per line.

ALL WANT-ADS MUST BE PAID FOR IN ADVANCE. Make checks or money orders payable to the American Physical Therapy Association.

Closing date for copy and cancellation is two months preceding publication date.

Institutions or physical therapists who do not wish their identity known may arrange for Blind Ad Code No. All such want-ads must include the following which will be counted as 2 lines:

Address replies to ..... care of **The Physical Therapy Review, 1790 Broadway, New York 19, N. Y.**

IMPORTANT

It is understood and agreed that the publisher shall have the right to reject or change the wording of any advertisement which in the opinion of the Editorial Board shall not be in agreement with the ethical standing of this publication.

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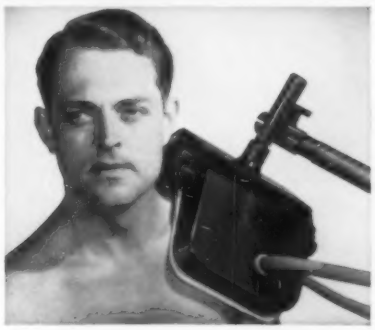
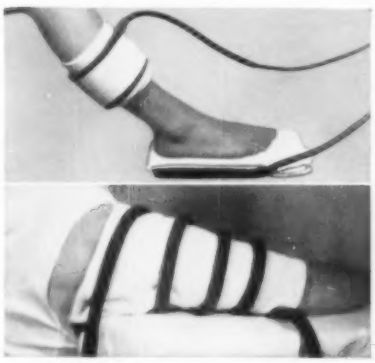
DESIGNED for Every Diathermy Technic



Contour applicator provides smooth, continuous surface for treatment of curved areas. With rubber-covered electrodes or induction cable limbs may be effectively heated.



The MF-49's unique circuit design permits the use of full-power tube output for deep heating and treatment of large areas. Frequency is controlled by a separate tube circuit unaffected by the operating characteristics of the patient circuit. This results in high output relative to tube input.

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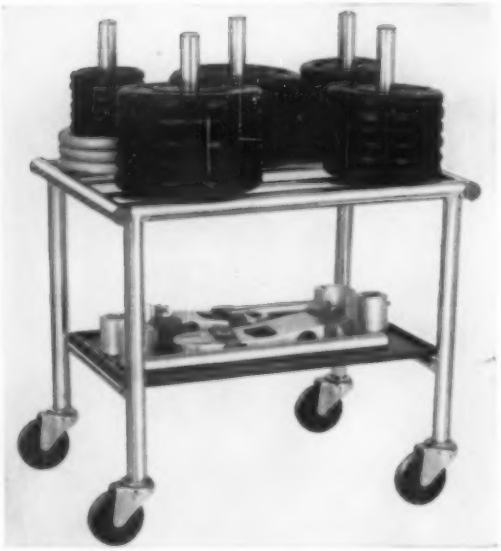

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The Preston Weight Caddy allows weights to be conveniently and centrally stored in any corner or closet, with a minimum of space. Yet the complete weight selection can be wheeled quickly and without effort to the treatment table. In larger treatment areas the Caddy can be easily moved from table to table as required, serving all with efficiency and economy of time and space. Holds up to 300 lbs. of weight plates in 1¼ lb, 2½ lb, 5 lb, 10 lb, and 25 lb sizes; also the small aluminum weights and miscellaneous accessories. Requires only 2 square feet of floor space.

The Preston Weight Caddy is built to seat level, the most convenient height for the administration of a weight program. It is no effort at all for the therapist, sitting on a chair or stool, to apply weights to exercise boots.

The Preston Weight Caddy moves on 3" ball-bearing heavy-duty swivel casters. Its chrome-plated tubular steel frame is attractively designed and ruggedly constructed with all welded joints. For extra sturdiness the legs are reinforced with an H-Brace. A conveniently located wooden shelf may be used to store exercise boots, bars, collars, etc.

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Weights, if needed, must be ordered separately:

PC 2041 — Iron Weight Plates, Slotted, 1¼ lb, 2½ lb, 5 lb, 10 lb, and 25 lb. ..... per lb. **.30**

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* T. M.—Design Patent applied for.

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